

14156

S*M

SCIENCE
FICTION

WORLDS OF

SCIENCE FICTION

OCTOBER 1974 75¢

if

if

Great New Flandry Novel!

POUL ANDERSON
**A KNIGHT OF GHOSTS
AND SHADOWS**

Colin Kapp Mephisto and the Ion Explorer

DEL REY

GEIS

HOAGLAND

DARNAY

Poul Anderson / Colin Kapp / Lester del Rey / Arsen Darnay

OCTOBER 1974

14156





Thank you Galaxy Readers! Due to your overwhelming response to our previous ad, we are happy to announce 14 new prepaid economy packages of underground comix. You will receive the best art and story telling of today at prices you can afford. Careful selection of the right packages will mean hours of reading pleasure. We believe these adult stories are what you have been waiting for. Just check the package(s) you want and send cash, check or M.O. and a statement of your age (you must be 18 to order these comix) to our address, and presto! ! your mind will be blown . . .

A. SCIENCE FICTION: Slow Death 2, 3, 4, 5, 6 (.75 ea.); American 1, 2. \$5.25 Brain Fantasy.

B. SPINE TINGLING HORROR: Deviant Slice; Insect Fear 3; \$5.00 Legion of Charlies; Psychotic Adventures 1; Skull 2, 3, 4, 5 (.75 ea)

C. FABLES & HERESIES: Binky Brown Meets the Holy Virgin \$5.75 Mary (.75); Fantagor 3 (\$1); Grim Wit 2 (\$1); Tales from the Leather Nun (.75); Spasm (.75); Star Reach (.75).

D. GRAPHIC NOVELS: Grim Wit 1 (.75); Image of the Beast \$6.25 (.75); Psychotic Adventures 2 (.75); Inner City Romance 2 (.75); Dr. Atomic 2 (.75); Harold Hedd 2 (.75); Armorkins; Skull 6 (.75); Two Fisted Zombies.

E. COMIX BY WOMEN: Wimmen's Comix 1, 2; Wimmen's \$5.75 Comix 3 (.75); Pudge (.75); Tits & Clits; Abortion Eve; Pandora's Box; Manhunt; Girlfight 1, 2 (.75).

F. HARD HITTING HUMOR & SATIRE: Dopin Dan 3 (.75); Dr. \$5.00 Atomic 1 (.75); Harold Hedd 1 (\$1.25); Big League Lafts; Short Order; Bijou 8 (.75); Green Dinosaur 2.

G. SEXY STORIES FOR NEOPHYTES & LIBERTINES: Armageddon \$6.00 1 (.75); Armageddon 3 (\$1); Good Jive 1; Facts O'Life; Eternal Tales; Hot Crackers; Young Lust 3 (\$1); Sex and Affection. Pork (.75).

H. 30's, 40's, 50's, 60's (you name it) NOSTALGIA PACKAGE: \$4.25 Greaser 2; Hungry Chuck Biscuits; Corn Fed 1; Merton of the Movement; Laugh in the Dark; Lean Years; High School/Mountain; Bakersfield (.75).

I. COLLECTOR'S ROBERT CRUMB: Peoples; Artistic (.75); XYZ; \$4.25 Mr. Natural 1; Black & White; Big Ass 2; Despair; Uneeda.

J. EC REPRINTS: Shock Suspense 12; Haunt of Fear 12; Weird \$7.00 Fantasy 13; Crime Suspense 25; Vault of Horror 26; Shock Suspense 6; Two Fisted Tales 34.

K. RECENT RELEASES: Eight of our most recent publications. \$5.00 Guaranteed quality— get them as they come off the presses.

L. SUPER COLLECTOR'S PACKAGE: All of the above comix \$35.00 (except K, M & N). Over 80 comix, a value of \$51.00 for only \$35.00.

M. FREAK BROTHERS & WONDER WARTHOG: Freak Brothers \$3.25 1, 2, 3, (.60 ea.); Wonder Warthog 1, 3; Feds 'n Heads.

N. COMPLETE ZAP COLLECTION: Zap 0, 1 (.50 ea.); Zap 2, 3, \$5.50 4, 5, 6, 7. (.75 ea).

I am 18 years of age or over.

NAME _____ ADDRESS _____

(Signature) _____

STORES: We offer 40% off retail value on orders over 200 comix. Send for our free catalogue today. Substitutions of high quality will be made. All comix are 50 cents unless otherwise noted. You may order single copies if you add 20 cents each for postage and handling.

LAST GASP ECO-FUNNIES—1274 FOLSOM STREET—SAN FRANCISCO, CA 94103

TESTING CONCEPTUAL LIMITS SINCE 1970

"Life on Mars would be a bore if we didn't have something good to read..."



A popular storytelling magazine like FICTION is as indispensable as your life support system or gravity pack. When a four week dust storm is tearing away at my unit, I just relax with a good mystery or western. Some guys read poetry on those long buggy rides to perimeter points, so that their style with the females doesn't go stale. The woman I room with is always paging around for the sexy parts. Drives me nuts...My girl-friend is crazy about gothics and crossword puzzles. And of course there is always the science-fiction if your tastes incline in that direction. Personally, I like the reviews. When I touch earth again, I'm going to get a nice little job teaching literature at a girl's school and I've got to keep informed...That's the way it is..."

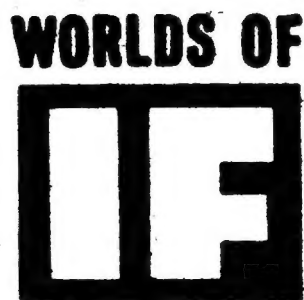
Use this coupon to take advantage of the special offers below. If you are not completely satisfied at any time you may receive a full refund on the balance of your subscription. Please enclose payment to avoid billing costs.

- ☐ 12 issues \$9 (save \$3)
☐ 24 issues \$17 (save \$7)



Name: _____
Street: _____
Town: _____
State: _____ Zip: _____

Send to: FICTION magazine
193 Beacon st., Boston, MA 02116



SCIENCE FICTION

Sept.-Oct. 1974
Vol. 22, No. 7
Issue No. 174

Arnold E. Abramson, *Publisher*

James Baen, *Editor*

Theodore Sturgeon, *Contributing Editor*

Bonnie Leigland, *Managing Editor*

Lester del Rey, *Feature Editor*

L. C. Murphy, *Subscription Director*

Dick Hoagland, *Science Editor*

John Wright, *Advertising Manager*

Jay Tunick, *Circulation Director*

SERIAL (Part I of II)

A KNIGHT OF GHOSTS AND SHADOWS, Poul Anderson 6

Dominic Flandry is back—older now, and wiser—
but still forced to battle and betray for an Empire
in which he no longer believes.

NOVELETTE

MEPHISTO AND THE ION EXPLORER, Colin Kapp 95

*Ever ride a sodium flare into the heart of an ion
storm . . . ?*

SHORT STORIES

SUCH IS FATE, Arsen Darnay 120

This one is a time-travel story . . . sort of.

JULIE, Jan Trenholm 135

*This story examines the nature of ESP—and
certain other elements of the human psyche . . .
An IF First.*

EGANTEI AND THE SAGE, John C. White 154

*A story of beauty and ugliness—and the relation-
ship that binds them into One.*

SAYING GOODBYE, Scott Edelstein 165

Obviously what this planet needs is foreign aid!

NON-FACT ARTICLE

- DEATH AND TAXES**, S. Roger Keith 149
*The Commissioner versus The 537 Wives of Stud,
Hegar, and a Vegan Toad.*

FEATURES

- (R)evolution**, Robert D. Enzmann & Richard C. Hoagland 78
*Torchships Now! (Part II of II) The second half of
a dialogue concerning a technological break-
through destined to transform our civilization.*

- ARS GRATIA**, Edward Kimmel 93

- EDITORIAL** 94
On Building Walls

- READING ROOM**, Lester del Rey 129
*This issue Lester discusses several new novels,
and in the process explains why sf is superior to
all other forms of fiction.*

- THE ALIEN VIEWPOINT**, Dick Geis 142
*Meet Alter. When he's finished you will never be
the same!!!*

- HUE AND CRY** 171
*Letters from Saberhagen, Rochon, Clendaniel,
Schickedanz, Schenck, Wilbern, Keller, Klein,
Wallace, Geis and Konkin.*

- Sf CALENDAR** 175
*Cover by Wendi Pini from A KNIGHT OF GHOSTS AND SHADOWS
Interior illustrations by Fabian, Freff, Gaughan, Pini*

Worlds of IF is published bimonthly by
UPD Publishing Corporation, a subsidiary
of Universal Publishing & Distributing Cor-
poration. Arnold E. Abramson, President.
Main Offices: 235 East 45 Street, New York,
N.Y. 10017. Single Copy: 75c. 12-Issue sub-
scription: \$9.00 in U.S., \$10.00 elsewhere.

Worlds of IF is published in the United
Kingdom by Universal-Tandem Publishing
Company, Ltd., 14 Gloucester Road, Lon-
don SW7 4RD. Arnold E. Abramson, Chair-
man of the Board, Ralph Stokes, Managing
Director. Single copy: 30p. 12-Issue sub-
scription in the United Kingdom: 4.20p.

Copyright © 1974 by UPD Publishing Corporation under International, Universal
and Pan-American Copyright Conventions. All rights reserved. Second class postage
paid at New York, N.Y. and additional mailing offices. The publishers assume no
responsibility for unsolicited material. All stories printed in this magazine are fiction
and any similarity between characters and actual persons is coincidental. Printed in
U.S.A.

Five fantastic ways to leave this world, alive!

Just by adding these science-fiction masterpieces to your library, you can depart any time. To live in the dimension you choose, for as long as you want. And return, of course, when you like. What a stellar way to go... and come back. For a very non-cosmic price!

TWO NEW GREATS



THE MANY WORLDS OF POUL ANDERSON. This Galactic Emperor's treasure-box sampler includes the best of Anderson—holder of five Nebula and two Hugo Awards. And editor *Roger Elwood* tops it off with careful, affectionate, insightful analyses of Poul's work. An honest-to-goodness tribute to one of science-fiction's abiding geniuses. 288 pages. \$6.95

INFINITE JESTS: The Lighter Side of Science Fiction. Fantastic science-fiction by authors like Aldiss, Pohl, Knight, Lafferty, Russ and six others proves that the realm of laughter lies not very far from the realm of tears. Edited by master science-fiction writer, *Robert Silverberg*, who has won two Hugo and three Nebula awards. 224 pages. \$5.95

THREE POPULAR CLASSICS

DUNE, by *Frank Herbert*. This celebrated Hugo and Nebula Award winner is meticulously plotted, detailed, frightening, exciting, baffling, challenging. It just won't let you go! 412 pages. \$5.95

HIERO'S JOURNEY: A Romance of the Future. By *Sterling Lanier*. This engaging, amusing science-fiction fantasy is set in the post-atomic war civilization of the 57th century. "Hugo material." LOCUS. 280 pages. \$6.95

AND WALK NOW GENTLY THROUGH THE FIRE and Other Science-Fiction Stories. Ten gripping stories representing the subtle union of precise biochemical technicalities and mystical reverence for the occult. 185 pages. \$6.95

Get these books from your favorite book store, or wherever science-fiction books are sold.

CHILTON BOOK COMPANY Radnor, Pa. 19089



Strategy & Tactics

The paper time machine

STRATEGY & TACTICS is a magazine. It's also a tool: a time machine that enables you to replay the crucial events—past, present, and future—that shape our lives.

Now, instead of merely reading about what's happening, you can explore and experience the alternatives and decision points through the technique of Conflict Simulation.

What is Conflict Simulation?

Conflict Simulation is a way of analyzing a political or military conflict situation. A way that is as intellectually stimulating as a game of chess, and as thorough as a written analysis.

Through the use of the Conflict Simulation (or "game") format, the conflict situation is re-created—so that you are in a position to make the vital decisions and, in the game at least, change the way things were, are, or will be.

What you get

STRATEGY & TACTICS magazine is published bi-monthly. Each issue contains:

★ A ready-to-play conflict-simulation game with a 22 x 28" playing surface, die-cut play-

ing pieces, and complete rules.

★ An analytical article on the same subject as the game in that issue.

★ Other feature articles on historical and military subjects.

★ Game and book reviews, commentary on existing games, and discussions of subscribers' questions.

The magazine is 48+ pages long, and all material is handled in a highly organized (and easily understandable) graphic format.

Games recently published in STRATEGY & TACTICS were: *GRUNT* (ground combat in Vietnam), *LOST BATTLES* (tactical combat in Russia, 1941-44), *USN* (the war in the Pacific, 1941-43), *COMBAT COMMAND* (tactical combat in Western Europe, 1944).

We also publish a separate line of conflict-simulation games, which you will find listed in the coupon.

Free to new subscribers

NAPOLEON AT WATERLOO, history's greatest battle presented in a game-design specially created to introduce new readers to Conflict Simulation.

Send check or money order to:
Simulations Publications, Inc.

Dept. 120 44 East 23rd St., New York, N.Y. 10010

Please enter my subscription to S&T for

- ☐ 1 year (6 issues)-\$12
- ☐ 2 yrs. (12 issues)-\$22
- ☐ 3 yrs. (18 issues)-\$30
- ☐ Current issue-\$4
- ☐ 6-month trial (3 issues)-\$8

Send me the following Simulations Games:

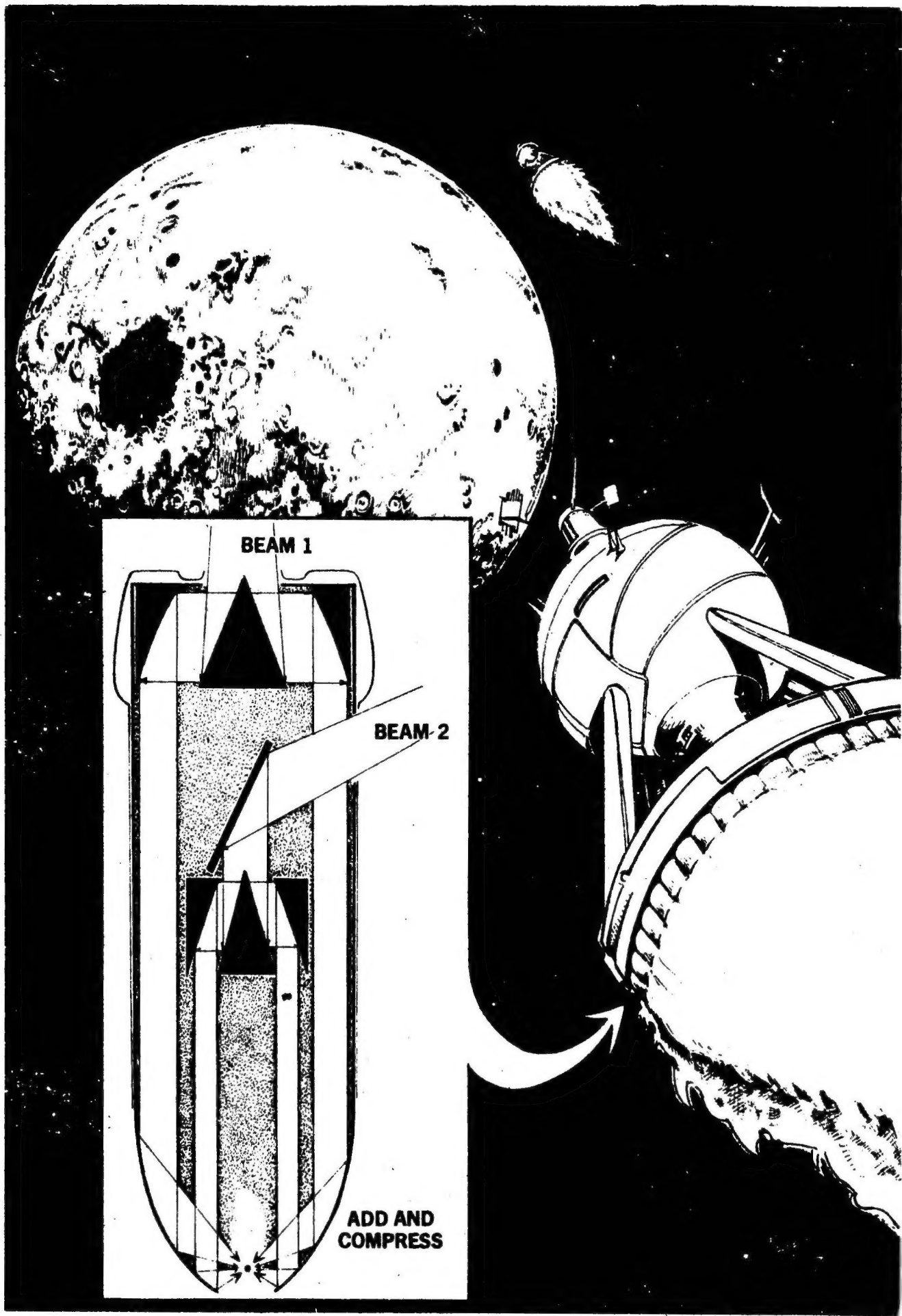
- ☐ Red Star/White Star (armor in the 70's)-\$8
- ☐ NATO (Soviet invasion of Europe)-\$8
- ☐ World War II (Europe, 1939-45)-\$8
- ☐ Sniper! (street fighting, WWII)-\$8
- ☐ Solomons Campaign (Pacific, WWII)-\$8
- ☐ Soldiers (WWI tactics)-\$8
- ☐ Lee Moves North (Civil War)-\$8
- ☐ American Revolution (1775-83)-\$8
- ☐ Phalanx (ancient tactics)-\$8
- ☐ Please send me your free brochure.

Name _____

Address _____ Apt. # _____

City _____ State _____ Zip _____





BEAM 1

BEAM-2

**ADD AND
COMPRESS**

TORCHSHIPS NOW!

**ROBERT D. ENZMANN &
RICHARD C. HOAGLAND**

(With invaluable assistance
provided by Spike MacPhee,
Glen Blacow, and Northeast
Cryonics Associates)

II

EVERY two years or so, for over a decade, NASA's center for unmanned exploration of the solar system located at the Jet Propulsion Laboratory of California's Institute of Technology, has thrown a party. Or so it has seemed.

From all over the world we would gather, marvelling, in JPL's Von Karman Auditorium as another NASA electronic miracle relayed back television from some remote corner of the solar system and made obsolete another file-drawer of data on the planets.

It was party-like. Friends, cor-

respondents and scientists whose diverse travels seldom allow them to cross paths, met under the pale ion-glow of TV monitors as pictures of Earth's sister worlds were painted on the screens. And between the briefings and the "instant science reported to our waiting tape recorders and cameras, we would talk.

It was in this atmosphere that the idea for the now-famous *Pioneer 10* plaque was born. Here, someone—only half-facetiously—suggested to Wernher von Braun that they had a plan, as the pictures came back from *Mariner 9* orbiting Mars, to reprogram the computer handling the data into painting a large port-hole on one of the Martian moons—thereby insuring him all the money he needed for a Martian expedition! And it was here, one

evening, that some of us tried to figure out how it was that, a good *twenty* years ahead of schedule—according to science-fiction predictions of such events—we were witness to mankind's reaching out to its celestial backyard. This was not the way it was supposed to happen. [See Heinlein, Asimov, and others of the Golden Decade of science fiction after World War II.]

Looking back now, that unease, that feeling of discontent which some of us shared in the midst of real-time events beyond one's wildest dreams, was well-founded. The Conquest of Space, as it had been named by the aforementioned visionaries, had an order and logic which actual developments on the Space Frontier have never had. It is probably this lack of logic and order which doomed Man's first push into space to a brief, nova-like existence.

In the Golden Decade of SF prophecy, space stations preceded earth-orbit assembly of the first lunar expedition; and a working version of the space shuttle preceded space stations. Planetary exploration, by *manned* expeditions, went forth only after establishment of the first lunar base. And all was founded on sound economic need, from the communications activities of the stations to the weather forecasting made possible by the advantageous presence of meteorologists in orbit. That was how it was *supposed* to happen.

Over Irish coffee in La Canada, just down the street from Von Karman, some of us spoke with wonder of the human footprints immortalized in moondust twenty years

before even so astute a prophet as Arthur Clarke had estimated that it would be so. Wasn't it amazing how even science fiction writers had been so wrong, we mused smugly?

What was amazing was that we actually could have been so blind.

What would be the current American attitude toward space exploration if SKYLAB, with its daring rescue, its earth-oriented photography, and its pioneering space manufacturing techniques, had been first to capture the public imagination, *followed* by Apollo? What if a reuseable shuttle and been an initial goal, in place of the *Saturn V*? What if . . .

Such speculation is obviously useless. The Space Age was born and shaped through political necessity and international rivalry. That it was probably doomed by its structure is academic. The last fifteen years have occurred, as we have seen them.

They were *not* wasted. And they have formed an appropriate and priceless prologue to what is about to happen: mankind's explosive acceptance and utilization of the solar system, fueled by the unlimited power of thermonuclear fusion. The true Space Age is about to dawn.

* * * * *

(*What follows is the continuation of that highly edited conversation begun in the previous issue. Ed.*)

HOAGLAND: Robert, you and I—many times—have discussed probable events, their timing and sequence, leading to what you have called the "urbanization" of the solar system . . .

ENZMANN: (interrupting with a grimace) An ugly word.

HOAGLAND: True, because it gives the impression of an interplanetary Los Angeles, heaven forbid. Even I, who wouldn't waste many tears on a few high rises on the sun side of Mercury, recoil from the images that word conjures up.

ENZMANN: The urbanization of space is but one step in a total process—the domination of solar space by mankind. It will occur, as I see it, as outlined in the following sequence:

- I—Unmanned and manned entry
(*Sputnik, Mariner, and Mercury-Apollo*)
- II—Relatively easy access through unmanned and manned stations
(Applications satellite systems)
(SKYLAB)
- III—Permanent earth orbital facilities founded on space-based economies
(True beginnings of private enterprise investment in the solar system)
- IV—Urbanization
(The stage where all choice locations are occupied with orbital cities, manufacturing complexes, and mobile, apartment-like units filling all available synchronous orbits, trojan points, etc.)
(Further progress will consist of recycling unwanted structures into larger systems—a process similar to renovation on Manhattan Island)

V—A Solar System Megalopolis
(Unromantic as any megalopolis on the surface of Earth today, except for a vastly higher material standard of living, with probable fascinatingly commensurate evolution of social systems)

HOAGLAND: You *are* talking about an eventual Los Angelesation of the solar system!

ENZMANN: We have already begun. We are already out there in the solar system and we shall continue to spread. With the advent of fusion the process will really take off. And just in time. Imagine what the earth will become if she alone, of all the planets and ecological niches in the solar system, is forced to carry the enormous burden of providing the material wealth necessary to house, clothe, feed, and amuse the seven billion human beings who will live here by the year 2,000! At present, with a world population of only about 3.5 billion (and only 200 million of us using 1/3 of everything), we are beginning to run out of certain material resources, such as fossil fuels and rare metals. Imagine the future if, trapped on this planet, *without* fusion energy, seven billion people demand a civilized life style, not merely an existence such as the majority of our 3.5 billion now strive to maintain.

Which is better: the urbanization of the solar system and the return of the garden, Earth; or the preservation of Space in all its vast unused emptiness while humanity quietly (or unquietly, with nuclear

weapons) goes mad in its limited planetary prison, destroying itself and the habitability of the earth, forever?

The solar system is the only appropriate environment for an advanced technical civilization. However, even in the Era of Megalopolis, generations down the road, an observer would probably not casually detect that there was a single inhabited entity orbiting the sun. It would appear (as it has for the last five billion years) empty; lifeless, and serene—a timeless pageant of majestic planetary points moving against the stellar backdrop of infinity.

And Earth? With the material foundation, manufacturing centers, and population growth of civilization removed from Earth, I envision our terrestrial home becoming a place of beauty like the lakeside retreats of China, various fabled gardens of the Middle East, the Cotswolds of England, and other present-day preserves of natural harmony and peace. Earth can become a vast preserve where independent cultures, life styles, and social orders can experiment among the greenery of the only natural home Man has in the entire solar system.

“Urbanization” of the solar system a dirty word? It may be the process whereby Man at last becomes a true humane being after almost four million years. Perhaps beyond Earth, with new rules, we’ll have a chance, at last to realize our true potential.

HOAGLAND: You’re right, of course. It’s just that word “urbanization.” I have the feeling, Bob,

that you are a prisoner of your own perspectives. Why does the end of the acquisition of the solar system have to be a grim “megalopolis?” It seems to me that, on a scale of systems-space-time encompassed by this vision, reasoning by analogy to an almost pre-industrial urban culture confined to one planet can only yield inaccurate extrapolations of present urban life. (Wow, that was a mouthful!)

ENZMANN: It actually doesn’t matter if I’m correct in each detail. Urbanization of the solar system will take the pressure off Earth. It will not “mess up” the solar system; the scale is simply too incredible for any of this to be noticeable on casual inspection. And the final result of this next evolutionary step around the sun, whatever it is, will be preceded by several generations of fascinating exploration and early development. For some people—like myself—that is the exciting prospect. How wonderful to be able to live through, and take part in, the greatest adventure in the history of Man!

Moreover, it is an adventure which will never end.

Overlapping mankind’s movement from one planet out into the planetary system orbiting our star will be a new and mightier age of high adventure, exploration, and settlement in a bubble with the sun as its center, expanding out into the Milky Way, nearly at light speed. It will be the next great leap of the torchships. And it is close. The majority of those reading this will live to see, and many will take part, in Man’s first efforts to send probes to the stars. It is even possible that

the first crewman of a starship destined to visit Alpha Centuri will be inspired by these very words to attempt that ultimate adventure. It is a nice thought . . .

[En route upon an endless journey is Man's first interstellar artifact—*Pioneer 10*. Before it can even leave the confines of the sun's far-flung planetary system, crawling deeper and deeper into the eternal night which yawns before it, at a meager seven miles per second, the *true* interstellar craft of its creators will be flashing past, destined to travel light-years into the galaxy in the time it will have taken *Pioneer 10* to reach the edge of the abyss. Eighty thousand years from now, *Pioneer* will reach the distance of the nearest stars. Waiting there to welcome it may be a race of beings which, in searching through their history, will recognize the stellar system etched upon its plaque, pitted and time-worn.

Pioneer will have spanned a breadth of time equivalent to that which separates Neanderthal from modern man. It may come as somewhat of a shock to its discoverers, therefore, that this ancient artifact is a gift to them—not merely out of space, but from their forgotten origins and their own legendary birth upon a place called Earth.]

HOAGLAND: We have presented the political and technical environment which is about to bring forth the first true "space-drive" and its imminent effect upon our culture. I feel, therefore, that it is

about time we got down to the heart of the matter, Robert, and described the fundamental breakthrough which will make it all possible. How will a torchship work?

ENZMANN: There has been a twenty-year world-wide effort to tame the elusive geni of fusion (an apt analogy because during that time the primary line of research was directed toward trapping a plasma within a strong magnetic "bottle" until enough of it could "fuse" to release more energy than the containment process used). It was twenty years marked by dogged perseverance, brilliant theoretical insight, and agonizing frustration as physicists practically had to invent a whole new branch of Physics, something with the unpronounceable title — "Magnetohydrodynamics."

The essence of the problem was simple. For each new technical innovation devised to contain the plasma long enough for fusion to occur, the plasma devised three new techniques to escape. It was somewhat like trying to trap an angry anaconda with rubber bands.

Into this dismal arena (for prospects of controlled fusion seemed to be beyond the end of the century, until recently), a new idea was injected. Quite simply, it asked, "Is there anything in the rules of this exotic game which insists that fusion has to be a *continuous* process? Suppose, instead of pursuing the exceedingly difficult road of containing the plasma indefinitely, with fusion energy trickling out, we examine an alternative technique of compressing the plasma intermittently. If we do this sequentially

and often enough, the effect will be *identical* to a steady trickle of fusion power such as we have been laboriously pursuing with other techniques. The secret here is that all we have to do is hit that plasma hard enough, from all sides, and plain old inertia will do the rest. The result will be a fusion power plant somewhat similar to an internal combustion engine where it is the *average* power of the eight sequential explosions in the cylinders which moves the car. Of course, there is one problem: what are we going to hit the plasma with in the first place?"

It was at this point that another technical breakthrough came to the rescue. Enter the LASER. It was suggested that intense light from a large laser, a source of precisely controllable electro-magnetic radiation, could be directed via suitable optics into a very small volume of space. If, as the laser was fired, a tiny pellet of fuseable material (in this case, frozen deuterium-tritium) were dropped precisely into that tiny volume, the following would happen:

The focused electro-magnetic radiation would exert a pressure on the pellet. Focused to such a small volume and arriving in such quantity, the pressure would be enormous. But more important, the frozen deuterium (heavy isotopes of hydrogen, the most abundant element in the Universe) would absorb this energy at its surface which would, of course, be violently heated. It was Dr. John Nuckolls (of the Lawrence Radiation Laboratory, attached to the Univ. of Calif.) who predicted what would happen.

If the laser pulse is actually *two* pulses—a smaller pulse of energy followed immediately by the main blast—then the outside of the pellet will absorb the first pulse, vaporize, and thus surround the pellet with a sort of atmosphere. The main pulse of intense laser light, upon arriving, will then further heat this "atmosphere," causing it to expand rapidly in all directions. At this stage, our tiny pellet of frozen deuterium resembles very much a tiny synthetic star with a superheated atmosphere blowing off explosively in all directions. Now, Newton enters the picture, for the reaction pressure to this explosive departure of the shell of gas surrounding the pellet drives shockwaves from all sides into the tiny, icy heart of this miniature "star." These crushing pressures actually compress the center of the pellet into the densities and temperatures found within the centers of stars like our sun, a million miles across! Yet the star created in the center of the vacuum chamber is only barely visible to the naked eye, a few tenths of a millimeter in diameter.

At such densities and pressures the deuterium-tritium mixture fuses, the nuclei colliding and transmuting themselves into helium in a violent analogue of processes that take millions of years to complete in "normal-sized stars" such as our sun. The liberated fusion energy blasts apart the heart of this newly created "star," sending the reactants in all directions at appreciable fractions of the speed of light. The tiny star explodes, ending its brief existence—as do many of the real stars a trillion times as

large—as a supernova. Total time from creation to the death of this artificial star is less than a millionth of a second.

If this process were accomplished successfully, the released energy would be greater than that required to fire the laser, maintain the vacuum, and keep the fuel frozen in precisely deliverable pellet quantities. Repetition of the entire sequence at rates ranging from once per second to a hundred times per second would provide for the “average” flow of energy envisioned previously.

There is enough deuterium on Earth alone to provide essentially unlimited energy for the remaining lifetime of the sun. This is readily agreed upon by a wide spectrum of energy and environmental experts. However, what some may have apparently failed to consider, is that there are stores of deuterium within the rest of the solar system which dwarf our terrestrial supply (which would come primarily from seawater.) One of the moons of Jupiter, Callisto, for instance, which *Pioneer 10* has revealed to have a density of only 1.65, seems to be a satellite with a 3,000 mile diameter, composed essentially of ice! In that ice, there is a vast supply of deuterium waiting to be mined. Little thought is necessary to realize that with fusion, which gives us the solar system through fusion rockets, we will discover enormous quantities of fuel beyond the “meager” quantity presently on Earth. No, energy is decidedly not a problem of the future.

HOAGLAND: Fascinating!

ENZMANN: And frustrating. It



56 Eighth Ave., New York, N. Y. 10014
741-0270

naturally occurred to an awful lot of people at about the same time that if you aim a high-power laser through magnifying glass at a deuterium pellet, fusion will be in hand. Those same people were shortly seen rapidly retreating behind their office doors, biting their thumbs with a vacant look, pounding their heads against the nearest convenient hard object, or just standing staring down at their shoelaces. Word quickly spread (bad news may exceed light speed under certain circumstances) that what you achieved when you aimed a high-power laser at a deuterium pellet through a magnifying glass or any other lens system, was *not* a fusion reaction, but a mad scramble of white-coated laboratory personnel for the cover of the near desks, benches, closets, and laboratories as the precision optics promptly exploded in about a million high temperature fragments, thus wiping out both the experiment and initial high hopes for fusion from lasers.

The problem, of course, was discontinuities in the glass. At the energy densities emitted by the lasers in question, the slightest imperfection (and even the finest optical glass is not perfect) absorbs enough energy to flash instantly into vapor, shattering the lens. These lasers had been used in an M.I.T. project designed to blast tunnels through solid granite! They had shattered cobblestones into screaming shards of high velocity shrapnel and had punched through inch-thick destroyer plate. The power in these beams exceeds that of the sun by factors approaching the millions. No lens system could have the perfect transparency necessary to withstand even the shortest pulse of these hellish systems, not even for the billionths (10^{-9}) or trillionths (10^{-12}) of a second it would take to produce the deuterium "star." Fusion, ignited by the "match" of the laser, seemed impossible to achieve for the very reasons which had first made it so attractive. How do you set off a reaction with a match you cannot hold?

HOAGLAND: That's unfair. You keep posing questions I know the answers to. Before you tell everybody, let me review something else:

We've been tossing around the term "fusion" pretty freely. Perhaps we should define precisely what fusion is. Most stars in the Universe, globes of matter (primarily hydrogen), in the range of several million miles across and several million times the mass of the earth, shine by internally generated energy, energy derived

from so-called fusion reactions—those nuclear events that smash light elements together to produce heavier elements and energy. In the sun, fusion turns hydrogen into helium, with an energy excess that eventually works its way the half-million miles or so to the surface of the sun, causing it to shine. Thus, the stars exist for periods ranging from millions to billions of years, depending on a complicated relationship of mass to luminosity which determines how rapidly a given star will use up its hydrogen fuel and thus continue to "live." Stars, such as the sun, which still have plenty of hydrogen to draw upon for fusion, are referred to as "main sequence" stars.

Now, relating all this to the experiment Dr. Nuckolls described, the internal densities of the proposed fusion "stars" in the laboratory are similar to the internal densities of real main-sequence stars. Right?

ENZMANN: Right. About 10 grams/cm³.

HOAGLAND: But without the huge masses and resultant gravitational fields to hold them together, such as actual stars possess, these laboratory creations promptly explode, so they are only duplicates of the real thing for fleeting millionths of a second, as opposed to billions of years for the sun, a main sequence star.

ENZMANN: Right.

HOAGLAND: As a real star evolves, after it has used its initial supply of hydrogen it shrinks internally, heats up internally, and releases even higher amounts of energy from a new set of fusion re-

actions, now involving heavier elements. Is that correct?

ENZMANN: You know it is. What are you getting at?

HOAGLAND: Is it possible to go beyond the energy release level of the Main Sequence star stage, to duplicate the density and energy release of later stages in a star's evolution, such as the Red Giant phase, or the White Dwarf phase, or even the final plateau of most stars—the Neutron Star with its impossible densities ranging up to 10^{15} grams/cm³?

ENZMANN: Now you're asking the leading questions. Let's save our discussion of the total annihilation of matter for a later article! For now let us return to the apparently insoluble problem of how you use a laser to set off fusion.

If the problem of the lens could be surmounted, Man would succeed in an incredible quest—bringing the stars, essentially, to Earth, harnessing their unlimited potential to solve Man's most threatening problems for all time. But to succeed, the problem of the lens had to have its solution.

The answer, as with all answers in the Universe to fundamental problems, was the picture of elegant simplicity: instead of attempting to focus the laser with a lens, use a mirror! With a suitable mirror system, the ravaging power of one, ten, or a hundred laser systems could be spread out across a reflecting surface so that the power density per unit of area was well below the level required even to significantly raise the temperature of the mirror. Then, with appropriate geometry, this dilute radia-

tion could be brought to a needle-point focus on the deuterium target. Result: FUSION. Simple. Elegant. Practical.

HOAGLAND: You're not going to tell everybody it's all done with mirrors!

ENZMANN: No, you're going to. I like to think the first solution was the result of our work in Northeast Cryonics, but that isn't quite correct. Perhaps, however, ours, I feel, is one of the least expensive and most elegant solutions. One of our designs, in fact, can be seen in Freff's illustration for this article.

The secret of fusion-by-laser lies in discovering the correct geometry for the mirror system, a geometry which will first dilute the radiation from lasers of incredible power, lasers which are now being constructed or are within sight of our present state-of-the-art. With those two tools, creation in a fusion reactor of actual "stars" identical in every respect to those we see spangling the night sky will become a reality. And a new Age will have begun for mankind. That is the scientific breakthrough now only instants away by the standards of the cosmic clock.

HOAGLAND: And almost no one realizes! Talk about revolutions. And torchships . . .?

ENZMANN: Examine carefully, if you will, the diagram I alluded to previously. You will notice that laser energy enters from two regions, is combined by appropriate optical flats, then flashes down into a *conical mirror* protected from destructive heating through a process identical to the reason we get cold in the winter and hot in the

summer—grazing incidence of incoming energy. The ring of laser energy (since, of course, this system is three-dimensional) is reflected all along the mirror length, as you can see, and is brought to a tiny pin-point focus of searing power at the precise special point where it will impact a pellet of deuterium mixture.

Now, note very carefully. The end of this arrangement of optics, lasers, and hyperbolic mirror is *open to space!* And what is a container, closed on three sides, in which a high-temperature gas is expanding? Obviously, a rocket.

This is why we shall have fusion torchships before we have fusion reactors lighting cities. You *have* to proceed through the stage of rocket development to get to power reactors. Nice?

HOAGLAND: Unbelievable.

ENZMANN: What I have described is only *one* way to build a successful fusion reactor. There are others. We at Northeast Cryonics have developed, hopefully, some interesting innovations of our own; such as impacting the pellet from one direction instead of from all sides. This doubles the implosion pressure and is extremely applicable to a fusion rocket system. We simply do not know if all approaches will be successful. Today research into this vital area, for rather obvious reasons, is breaking out across a broad front. We have had a breakthrough in producing fusion using laser techniques. That is not to say that other approaches may not—in fact, will not—overtake the laser approach. Research by its very nature is uncertain. But

one thing can be relied upon: whatever technology we can envision to produce fusion rocket engines today will be superseded by better technology tomorrow. Heinlein's Third Stage has successive, higher orders of perfectability implied by the fact that the first of anything has room for improvement, even the first of a third-stage device!

Now, to address the exciting prospect of the when, where, and how of torchship construction: Let me begin by laying out one more table. I assure you it is the last. As you can see, tabulated below are "pacing items" ranked in order of flight-readiness as noted (or projected, in the case of future hardware).

- 1) 1965—Useable spacesuit technology
- 2) 1972—Expendable space station experience; living, in-orbit repair, in-orbit manufacturing experience
- 3) 1976—Controlled fission fusion and pure fusion processes directly applicable to torchship engines
- 4) 1979—Chemical-powered reusable space shuttle
Beginning of routine space operations
Beginning of large-scale private investment
- 5) 1980—Historic coupling of torches to space shuttles and tugs
- 6) 1981—Initial flight tests of first true "torchships"
- 7) 1982—Manned fly-bys of every planet in the solar system
Round trip to Pluto by torchship; 3-5 weeks!



King Size or
Deluxe 100's

Micronite filter.
Mild, smooth taste.
America's quality cigarette.
Kent.

Kings: 16 mg. "tar," 1.0 mg. nicotine;
100's: 18 mg. "tar," 1.2 mg. nicotine;
Menthol: 18 mg. "tar," 1.2 mg. nicotine,
av. per cigarette, FTC Report Mar. '74.

Warning: The Surgeon General Has Determined
That Cigarette Smoking Is Dangerous to Your Health.



*Try the crisp, clean taste
of Kent Menthol.*

The only Menthol with the famous Micronite filter.

Kings: 16 mg. "tar," 1.0 mg. nicotine;
100's: 18 mg. "tar," 1.2 mg. nicotine;
Menthol: 18 mg. "tar," 1.2 mg. nicotine;
av. per cigarette, FTC Report Mar. '74.

Warning: The Surgeon General Has Determined
That Cigarette Smoking Is Dangerous to Your Health.

- 8) 1984—Chemical-powered surface-to-orbit hypersonic aircraft
- 9) 1984-
1988—Construction in space of first large Torchship Liners as hypersonic aircraft drastically reduce cost and increase payload capacity for surface-to-orbit operations.
- 10) 1986—Nuclear-powered surface-to-orbit hypersonic aircraft capable of lowering operations costs to 12 cents per orbited pound (1972 commodity dollars)
- 11) 1985-
1995—Decade of enormous activity throughout solar system. Tens of thousands of humans, animals, machines scattered across its vast extent: exploring, building, mining, and settling the Space Frontier.

In addition to "when," "where" is also interesting. The first torchships will be built on earth. They will probably be modified upper stages of vehicles which rightfully have made space history over the past fifteen years. The name "Agena" or "Centaur" may enjoy a brief renaissance as, rebuilt inside and fitted with a prototype fusion drive, this first torchship becomes an unmanned precursor to manned flight to every interesting chunk of real estate orbiting the sun. In every other area—guidance, computer technology, navigation, power systems, communications, and control, we have learned enough across these last incredible fifteen years to take on the solar system and anything it can throw at us. All we have lacked was the propulsion.

Thus, the first torchship, Centaur or Agena, lofted into orbit, in the payload bay of a space shuttle, turned loose, will commence to "unteach" the lessons of space laboriously explained to each of us by the Cronkites, the Magees, and Bergmans of the pre-Space Era.

Spaceflight, up to now, has consisted of assembling a very large quantity of fuel and oxidizer in a metal tube, together with an engine to burn it in, and a very small payload (relatively speaking). The object: to burn said propellants as soon as possible, thus accelerating fuel, tank, engine *and* payload away from the earth as rapidly as possible. Once having released the payload from the final stage, you are in for the Long Wait.

Since you have used most of the energy contained in the fuel you burned just to climb to the top of Earth's gravitational "hill," there isn't much left to give you a healthy push on your way to Mars, the Moon, Venus or Jupiter. There you are, coasting along at a few thousand miles per hour, with millions of miles to cover. Worse, you are not traveling in a straight line, but a curving path which will add literally hundreds of millions of miles to the trip. This is the classic, coasting interplanetary journey portrayed by everyone from Asimov to Zelazny.

Therefore, later—much later—varying from about a hundred days for a "quick" trip to Venus to almost two years to Jupiter (or six years to Saturn), you arrive. By which time most people will have forgotten you're out there, except

for that dedicated gang back at Mission Control.

That is the picture of spaceflight held by 99.99 percent of those who take the trouble to think seriously about the subject at all.

The days of such absurdities are essentially over. Alas, the 145-day flights to Venus and the 240-day missions to Mars (with its exciting layover of a Martian year, waiting for Earth to be in correct position for the return coasting flight) are not going to happen. Technology and time have caught up, even with Arthur Clarke (at least in the solar system).

This is the way it will happen: A torchship will leave earth orbit, accelerating on a series of explosions produced by the events previously described. Fusion, with millions of times the energy of chemical reactions, and much higher coupling of this energy to the exhaust, results in a rocket engine and total ship performance which is nothing less than sensational, compared to the previous scenario. The ship accelerates away from Earth at (let us say, for the purpose of making a point), one "gravity"—an acceleration equivalent to that experienced on the surface of Earth where all objects fall at the same rate, 32 ft/sec². To those of us in the ship, everything will appear as it does on Earth, unless we look out the windows. Something dropped in the cabin will apparently "fall" to the floor at the same rate as it would on Earth, although actually it is the floor which is accelerating up to meet the object. No difference. Our "weight," synthetic as it is and produced only by the thrust of our

fusion engine, will be just as useful when it comes to sitting in chairs, or walking, or drinking liquids as actual gravitational weight is on Earth.

After about half an hour of this, we may begin to wonder if there isn't something rather strange about the performance of our vehicle. After all, we know that "normal" rockets such as those used in Apollo never burned for longer than about 12 minutes, and in that time consumed literally thousands of tons of fuel! This ship, about as massive as a jumbo jet (200 tons) has, according to our fuel gauge, consumed only 1800 *pounds* of deuterium—less than a ton! And we are *still* accelerating.

After about two hours of this novel experience, enjoying normal earth weight, carpeted lounges, the pleasant attentions of stewards who bring drinks we can consume in the normal manner, we walk down to the observation area where we see a magnificent panorama of space. Imagine the shock as we realize that we are halfway between Earth and the moon—120,000 miles away from Earth and still accelerating, still consuming fuel. At this point we discover something else. The heavens are slowly turning around; the earth which was behind us is now in front, and the moon which was before us has taken up a position aft (to borrow a nautical phrase). It becomes apparent to us almost at once that the two celestial objects have not changed positions at all. Our 200-ton ship has rotated 180 degrees. Our fusion "torch" engine, which only moments before was accelerating us to higher and

higher velocities, is continuing to thrust, but its effect is now to kill our enormous velocity. Inside, of course, nothing changes. Acceleration, deceleration, it's all the same *within* the ship where the floor still presses reassuringly against our feet with normal Earth weight.

Glancing at the system read-outs positioned so conveniently near the view-glass, we are incredulous at our measured velocity indicator. It must be in error! We are moving, it says, at 63 kilometers per second, relative to Earth. We remember Apollo, when the Command Module crawled across this point at a mere .6 kilometers per second—one hundredth our velocity—not in *two hours*, but over two days! Two hours more and the Captain slides us neatly into a breathtaking orbit of the moon. Under its gravitational field, weightless for the first time during the flight (the drive is turned off), we take 45 minutes to swing around the Farside and head home. Earth before us once again, the torch is lit, normal gravity resumes, and we accelerate away from Luna. It has taken us less time to span the almost half million miles between these two worlds than it took, in 1974, to fly across the United States in a vehicle of comparable size. It has taken far less fuel (a total of about 15 tons of deuterium-tritium) than a 747 burned flying cross-country (about 70 tons of kerosene) and at vastly higher peak velocities—227,000 km/hr, compared to a 747's 960 km/hr. We have made the trip totally contained in an essentially terrestrial environment with all the "comforts of home."

Similar journeys, to any planet in the solar system, under identical environmental conditions (simulated Earth gravity through continuous acceleration/deceleration; conventional meals served on real plates; and beverages served in cups or glasses) will be commonplace within 15 years. No point in the solar system will be further from any other point, at one "G" acceleration, than 5 weeks' travel time, the length of a relaxing terrestrial cruise. The ships, of course, will resemble ocean liners far more than they will terrestrial aircraft.

HOAGLAND: Breathtaking, literally breathtaking.

ENZMANN: But—as you should be the first to point out—it is much more than that. It is necessary. With controlled fusion and torchships, we inherit, not only the solar system but the stars. Without this discovery, we as a species would most certainly be confined to our planet, Earth. As we are now discovering, Earth is a very limited environment in which, if we were to remain, we would have to impose the most severe restrictions upon ourselves in the use of resources and our future evolution. Because of the perversity of human nature as evidence by history (as with physics, every action produces a reaction), such restrictions would necessarily quite soon become dictatorial. Thus, barely two hundred years after its first real test, the fragile experiment of "freedom for all men" would have perished, disappearing from the future of mankind forever, although probably not without cataclysmic, devastat-

ing, and continuing violence all over the globe.

Instead, if the solar system is well on the way to urbanization by 1984, and the first unmanned precursor probes to the stars have been launched, we can dismiss the Orwellian prophecies. It will be the beginning of the Post-industrial Age when spaceships, the Atomic Age, microelectronics, robotics, fusion power, and exploration of the stars emerge. It will be the beginning of Civilization as Man has never known it but, in effect, has always dreamed it.

Years ago, I termed this move to expand mankind's ecological niche *The Grand Design*. It has begun with our first tentative probings of the solar system. It will continue with torchships and urbanization of the sun's family, according to Krafft Ehrlicke, as Man's *Magnificent Heritage*.

Realization of its real meaning will come, however, whether it be 50, 5,000, or 5 billion years beyond tomorrow—when the earth is destroyed, astronomically, forever. Those who remain will look up into a hundred, a thousand, perhaps more, night skies and realize that Man, along with unknown numbers of other children of the Galaxy, has taken his rightful place among the Stars.

And it will begin with Torchships—Now. •

(Future articles with Dr. Enzmann will deal with a new dimension of basic physics and his startling predictions of further future developments beyond the subject dealt with in this article.)

BIBLIOGRAPHY

NAVIGATION SATELLITES

Aviation Week & Space Technology 8 April 1974 p. 65, 26 Nov. 1973 p. 46

PREDICTION & CONTROL OF EARTHQUAKES

Dr. Aaronson, S., 1974 April, in The Sciences Vol. 14 No. 3, Pub. N.Y. Academy

QUASARS ARE EXPLODING GALACTIC CORES

Science News, Vol. 105, 6 April 1974, p222
"Optical Spectrum" in press, May 1974, front cover in color, core of exploding galaxy and hyperon stars

MEDICAL CONFERENCES VIA SATELLITE TV-RELAY

Science News, Vol. 105, 6 April 1974, pp. 226-227

NATURE OF HYPERON STARS

Essentials of Astronomy, Dr. Lloyd Motz, Chmn. Dept. Astronomy, Columbia University, Columbia University Press, N.Y. & London 1971 4th Ed.

ORION ROCKETS & THEORY OF NUCLEAR PULSE PROPULSION

1st Conf. Planetology & Space Mission Planning, Annals N.Y. Academy Vol. 140, 1966, 683 pages
2nd Conf. N.Y. Academy, Vol. 163, 1969, 588 pages
3rd Conf. N.Y. Academy, Vol. 187, 1972, 459 pages

TORCHSHIP THEORY

5th Symp. on Eng. Problems of Fusion Research, in press IEEE Nuclear & Plasma Sciences Soc. Designs for Reflective Optics in Fusion Systems (given at Princeton University)

N.Y. Academy Conf. on Electrostatic & Electromagnetic Confinement of Plasmas and the Phenomenology of Relativistic Electron Beams March 1974 in press
Reflective Optic Systems For Lasers (given in N.Y. at Academy)

2nd European Electro-Optics Conference, Montreux Switzerland April 1974, in press
Fusion Through Reflective Optics



EDITORIAL

ON BUILDING WALLS

Sometime early in any new Editor's term of office it is incumbent upon him to step out front and clearly and forthrightly state his editorial policies for all to see. Right? Well, I thought so—until it came down to actually putting it on paper, that is. Then I realized that for a science-fiction magazine such a statement would entail a definition of sf—and, Gentle Readers, I just don't happen to have one of those on tap.

I've seen a lot of such definitions; most of them are witty, trenchant, well thought out—and manage to corral about two-thirds of what I consider to be valid sf, leaving that other vital third (whichever third it may be) out in the cold. Such definitions also generally include *within* the pale one or more categories which I do *not* consider valid sf, ranging from NASA-pamphlet style fiction ("But what if our too-steep re-entry curve results in excessive loss of ablative material, Joe?") to paranoid-schiz dissolving-at-the-edges, rotten-to-the-core stream-of-consciousness type fiction. (Yes, the doorway really *is* a gaping mouth, and it really *is* going to eat you!)

No, when it comes to defining our field, intensive definitions don't seem to work very well. They just build walls. Unnecessary ones. They stifle and constrict and don't contribute a damn thing toward keeping out the gunk.

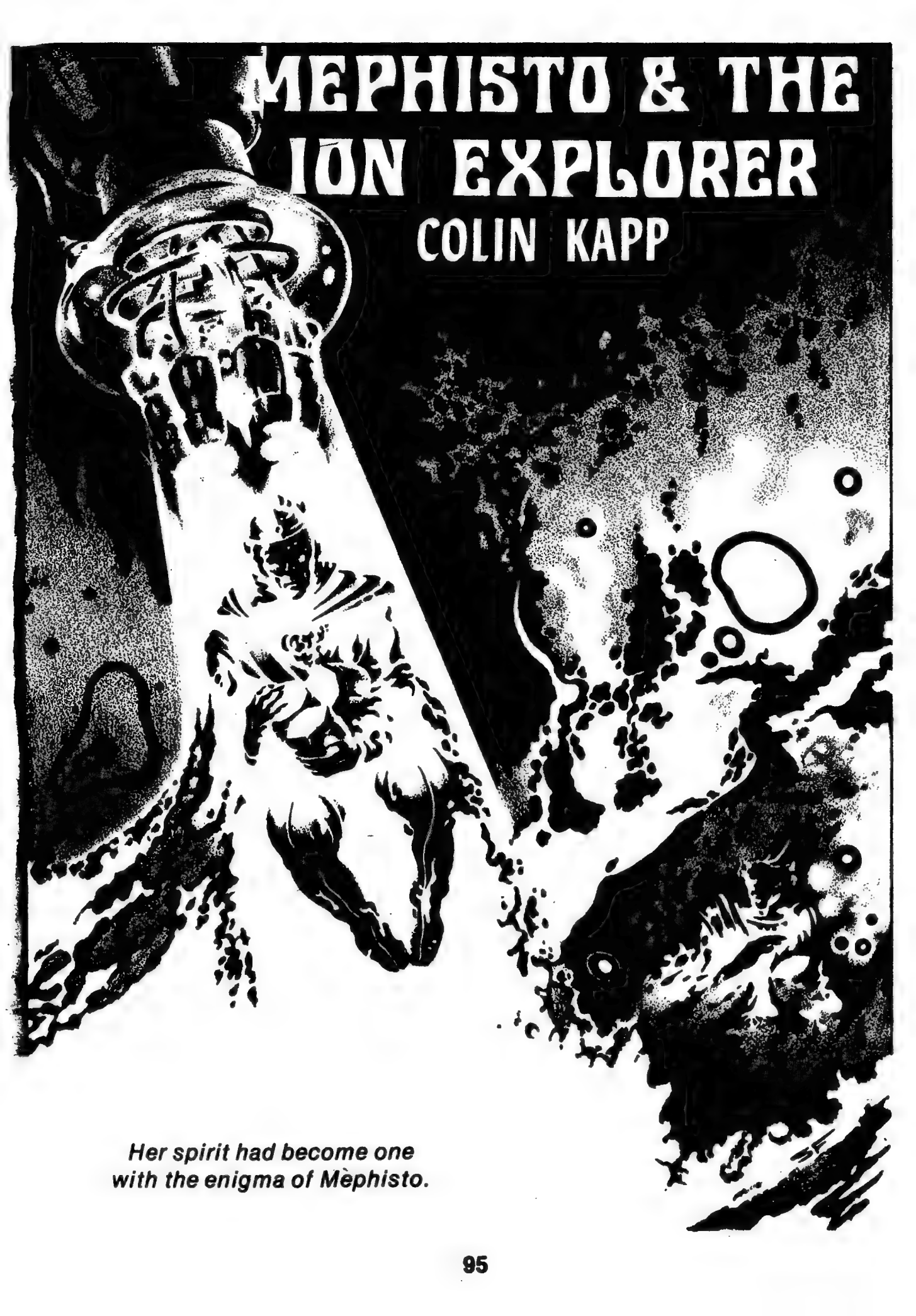
As for extensive definitions, well, they tend not to be terribly *definitive*, as it were, but at least they're harmless and hopefully entertaining. So here, off the top of my head are a few of my favorite authors: Robert Heinlein; Cordwainer Smith; Larry Niven; Roger Zelazny; James Blish; Theodore Sturgeon; Isaac Asimov; Ursula K. LeGuin; Poul Anderson; Kurt Vonnegut, and on and on I could go—but I'd better not or the list would begin to grow exclusive instead of representative. Walls again.

So. No walls—and just one credo; that if Man behaves with a modicum of rationality and good will he can prosper, on Earth, in his Solar System, and (unless he meets Bug Eyed Uglies even meaner than he is) in the farthest reaches of the Universe; and that if he does not so behave, he is doomed to tedium, tribulation and probable extinction.

—BAEN

MEPHISTO & THE ION EXPLORER

COLIN KAPP



*Her spirit had become one
with the enigma of Mèphisto.*

H E LOOKED up as one of the ship's stewardesses came toward him. He already knew why she had come.

"Doctor Lisbon?"

"Yes?"

"The captain will see you now."

It was obvious from her face that she stood in slight awe of him. It was not every man whose importance warranted pulling a stellar liner out of spacewarp for an emergency rendezvous. Nor were there many in space who did not know his reputation as the 'Ion Explorer'.

Sadly, Peter Lisbon replaced the book of poetry on the library shelf, and followed her. This far it had been a pleasant trip. Unfortunately it had its ending in an appointment with fear. He hoped that the terror inside him did not show.

In the Captain's cabin he was introduced to the senior officers of the liner. All were glad to shake his hand, although the nature of his mission was not mentioned. Then he was conducted with some ceremony to the docking hatch, beyond which the brutally functional space tug waited to take him to the observatory complex in orbit around Mephisto. They piped him off-board as though he were a hero. Lisbon was sickened by his own duplicity. He knew he was a coward.

As he passed through the gaunt, metal airlock seals, it was more than the end of a journey. It was also a returning to a way of life he had hoped was dead and past. For twelve months now he had escaped such scenes as these and their aftermath. In the interim, he suspected,

he had lost what little nerve he had.

The tug made no concessions to comfort. Safety and efficiency were the only criteria. He was strapped into a rough webbing harness, like a transit crate of electronic instruments, and told to stay there. The warning was not untimely. The tug's maneuvering was a series of bone-breaking excursions as it drove itself clear of the gigantic bulk of the liner and began to lose speed as it fell toward the lower orbit of the space observatory.

Although he had been in a similar situation a hundred times before, Lisbon had never conquered his dislike of the experience. The raw, physical contact with space, which was nowhere more apparent than in a space tug, frightened and humbled him. His admiration was unbounded for the men who spent most of their working lives in these perilous and unrewarding conditions.

Finally one of the crewmen approached him and saluted.

"Doctor Lisbon—you have priority clearance for disembarkation. Would you please make ready to report to the mission controller in the observatory as soon as the airlock seals have been verified."

"Acknowledged!" said Lisbon, without enthusiasm.

He released himself from the webbing cage, hating the feel of null-gravity. The summons had been unnecessary. He had already deduced the attainment of orbit around Mephisto and the coupling of the space tug to the observatory complex. Unpleasant though the short journey had been, he now regretted the ending of even this,

guessing something of what was to come. He had savoured every second of the orbiting procedure, trying to stretch the seconds out to gain a few more precious moments of heart's ease before the great ordeal began.

KARL Reinspringer, the mission controller, was waiting for him in the observatory. Theirs was an acquaintanceship of long standing and great mutual respect. Once a *flamer* himself, Reinspringer knew exactly the fears that hunted behind Lisbon's precarious pose of calm. This knowledge was a bond unique between *flamers*. It was something which could never be appreciated fully by those who had not themselves passed through the ion barrier.

"You got my message then, Peter?" Reinspringer's relief at seeing Lisbon was pathetically obvious.

"Pulling a stellar liner out of space warp for a crash re-direction spells big trouble without sending messages. But I can't help you, Karl. I was taken off the lists a year ago."

"There're good *flamers* and exceptional ones." Reinspringer's bald head returned a green from the fluorescent panels, almost as though his head itself was domed with bottle-glass. "The good ones I had were no match for Mephisto. Now I need an exceptional one to see if we can get them out."

"I told you, Karl—I've been retired. Struck off."

"My ears heard you, but my brain doesn't listen too well. I have

two of my best people in ion-state on the surface. They ran into trouble—and I lost all four of the backup team trying to get them out. Now there's six people down there, Peter, and some of them may still be alive. I don't give a damn about your coming off the lists. I need you to go down there to fetch any survivors out."

"What makes you think I might succeed where your backup couldn't?"

"Because survival in ion-space isn't just a habit with you—it's an instinct. That's how you got to be the oldest *flamer* in the business."

"You know why they retired me?"

"They said you began to have bad entries into ion-space. Look, Peter, I worked with you for years. I know you always did have bad entries. That's not the point. It's the exits that count—the ability to come back."

"Tell me about Mephisto," said Lisbon unhappily.

LISBON's first view of Mephisto was the real crusher. Through the observatory's clearports hung the great ball of Mephisto, crawling with tongues of fire. Even from their orbital distance it seemed to fill most of the available sky. It hung there, huge, hideous, and enigmatic—like a gigantic coal-fire hanging in space. Gazing into this curious cauldron it was impossible not to imagine that one could feel its heat and hear the hiss and shriek of the flames. This feeling touched some agonizing pulse in

the primitive root-instincts of Man. Yet the realities of ion-space would doubtless show even these fears to be an understatement.

Too hot to be a planet; far too cool to be a star, Mephisto was a cosmological mystery. It had no place in the *Hertzsprung—Russell* diagram. It fitted none of the accepted classifications either for type or the nature of its reactions. Perhaps it was a throwback to a state of matter which existed before the universe began. Or perhaps it was an example of an evolutionary sequence beyond the fate of dwarf and neutron stars. Perhaps it was something as different again.

"I know what you're thinking, Peter," said Reinspringer, coming up behind him. "You're wondering what possessed us to put people down there in the first place."

"I've seen worse hells," said Lisbon. "But at least the physics of the reactions were well understood before anybody went in. How come your team went down so unprepared?"

"Frankly, we didn't have the answers to give them. Mephisto's an enigma. For four years we've sat and looked at it and theorized. Ultimately somebody had to take the risk of a descent, even into such a welter of unknowns."

"Who were your lead team?"

"Andre Beriov and Loya Tremain."

"Beriov's a good man. First-rate theoretical physicist. But I'd not rate him as much of a flamer. As for Loya—I thought I'd taught her to know better than to take risks like that."

"She's specialized in solar-flare

work. Isn't that sufficient recommendation?"

"There's one hell of a difference between running sunflares and mixing it with the type of ion stew you have on Mephisto. In stellar work you don't have the problems of exchanging ion identities in order to move around. What about the backup team? Weren't they more widely experienced?"

Reinspringer bit his lip. "All are new faces from the IEC. Top graduates from environmental training, with some solar work by way of experience."

"It's the emphasis on solar work which I find disturbing. Whatever it is, Mephisto isn't a sun."

Reinspringer was frowning heavily. "Are you suggesting I sent the wrong team?"

"The team's all right. It's Mephisto that's wrong." Lisbon swung his arm to encompass the great orb hanging in the sky. "I've been studying the interaction between some of those flames down there. Most of the reactions make sense, but some have a peculiar chemistry which isn't even in the book."

"Hence our interest in Mephisto in the first place."

"Sure—but what happens if a flamer happens to find a route using one of these parachemic elements as an identity? What type of chemistry does he use to find his way out?"

Reinspringer was impressed by Lisbon's rapid grasp of the problem. "It was a calculated risk. Regrettably it seems we didn't do our figure work too well."

The knot in Lisbon's guts was now so tight it brought beads of

perspiration to his brow. He knew by instinct when a risk was unacceptable. In ion space his instinct had fetched him back safely more times than either his training or his experience. Had he been on the project from the start, he was confident that there would not now be six souls down there in that ionized limbo. Certainly with such incomplete knowledge of the environment nothing could have persuaded him to make the descent himself.

At this point, however, the decision had been taken from him. Regardless of the risk, if life even in ion form persisted on Mephisto, he was duty bound by the unspoken creed of the *flamers* to go down there and offer such assistance as he could. From just such a prospect had developed the broad bands of nightmare which had resulted in a series of bad entries and finally caused him to be struck off the IEC register. For this last act he had been secretly glad. The nightmares had continued, but without the menacing possibility of becoming real. That was until Reinspringer had pulled him off a liner in mid-warp to help with an emergency . . .

WHEN HE asked for three drums, they brought him three, wrapped in shining vacuum packs. Each drum was worth more than Lisbon could earn in a lifetime. In the dust-free, sterile conditions of the preparations room he took the beautiful octahedral instruments from their wrappings and examined them carefully. They were true and flawless. His fingers

moved lovingly across the diaphragms, testing their sensitivity. Through the triple glass of the control-room windows Reinspringer was anxious about such handling, but dared not interfere.

Finally Lisbon was satisfied and nodded his assent. Reinspringer printed out the spectral analysis of the gas in the ionization chamber which the *flamer* had chosen for his initial identity. Argon blue-green at five-fourteen nanometres. Lisbon leaned back into the black softness of the couch, his precious drums drawn up close to him. He was as ready to go as he ever would be.

He was approaching the point he had learned to fear the most. This was the actual entry into the state of ion identity. The metamorphosis was relatively easy: coming to terms with it was the part that made him cringe.

"How do you feel?" Reinspringer's voice was metallic over the speaker.

"Sick!" said Lisbon. "What else'd you expect?"

The phrase held no element of humor, yet everybody grinned, and in so doing the tension wound down a minute amount. Lisbon steeled himself. He hoped it was not obvious that he no longer believed he had the moral fibre to take the stresses without cracking. Once safely through the ion barrier and having forced himself into an acceptance of its tenets, he knew he would feel better—more able to tackle the problems that were posed. In retrospect it always seemed a challenge. But in prospect . . .

As the electrode cages dropped

around him he asked himself for the millionth time why he had ever made *flaming* his profession. As always, it was a useless question. His very first exposure to the state of ion identity had opened up enthralling vistas so enormous in scope he had had no other choice. Once sampled, there had been no other way to live.

Deeply rooted in the psyche were factors which had only shadowy analogues in the molecular world. Challenge, excitement, and complete involvement with the environment were words which conveyed very little of the experiences of *flamers*. There were no terms to explain the totality of the impressions every ion-space explorer knew so intimately.

Nothing in this argument, however, modified the fact that a journey into ion-space was always a hazardous venture. Mephisto promised to be the most hazardous of all. Even such a superbly trained and practiced lead-team as that sent down by Reinspringer had critically overreached itself. The long list of known dangers was enough to sit like lead in Lisbon's stomach. He dared not even speculate about the inevitable unknowns.

At last the preparations were complete. Through the control-room window Reinspringer signaled the final acknowledgment. As it always did when the air pressure was reduced, the sounds in the room dulled curiously, leaving nothing but the sharp click of the pumps. Lisbon braced himself in the couch and waited for the transition to begin. He avoided looking at the faces at the window. He wished

they would not look at him. The first stage of trans-ionization was always a little like an execution.

Fortunately the transition period was short. Once the field hit maximum there was nothing left of him capable of either transmitting pain or receiving it. In one frenzied picosecond he was completely destroyed and then rebuilt, transliterated bodily into a sentient, gaseous plasma-state by electron stripping and ion pairing.

Disorientation . . . the trauma of destruction and re-creation . . . vertigo. Especially vertigo. Seconds before, he had been seated on the preparation couch. Suddenly the couch had gone. The observatory which bore the couch was already a thousand kilometers above him. Between him and the furnace in the sky was . . . nothing.

HE WAS insubstantial, a plasma functioning in a vacuum still too hard for the focused microwave beam to raise even a glimmer of visible radiation. He was falling . . . Falling more terribly than one falls even in nightmare shock. Nor was there any pillow he would reach when the fear peaked at the limits of what he could endure.

He would just go on falling . . .

Panic rose, and he fought it as he had done so many times before. This time he *knew* that he had lost the vital mastery. There was nothing left in him capable of controlling the situation. He was going to continue falling into the fires beneath him, to become a minor contaminant in this very alien furnace.

"Snap out of it, Peter!"

That was Reinspringer's voice

urgent on the beam. Lisbon wondered if he had been screaming or if the controller had correctly deduced what was going on in his mind. The latter was more probably true. Lisbon clutched desperately at this link with normality. Thankfully he felt control swim back.

He was through!

"It's all right, Karl. A bad entry is all."

"I tell you something, eh? Your entry was no worse than the others when they saw what they were getting into."

Lisbon did not answer. Beneath him, the challenge of the vast inferno that was Mephisto was a matter that now commanded all his attention. Reinspringer's continued reassurances held less meaning for him than the micro-traces of helium he was beginning to discern rising out of the fringes of the upper atmosphere. He reached out to feel for his drums and found them comfortingly close.

The adoption of ion-identity was one thing in a classical ion-training environment. It was quite a different matter to plunge through space to fall headlong into the complex cauldron of a body such as Mephisto. Lisbon had to remind himself that, having adopted a suitable ionic state, the crushing pull of the planet—or was it a rogue sun?—was not necessarily an inescapable gravitational pit. Conversely, he found it impossible to forget that even the theorists disagreed as to precisely what Mephisto was.

He felt the nudge of the beam, corrected his course. In the observatory far above him, Reinspring-

er's hand at the controls was a constant reminder of the need for objectivity. Never for a moment must he forget he was a creature whose normal identity was molecular—the so-called state of mol-identity. Ion-identity was a transient and artificial state. Its virtue was that plasmod identities could go and observe in conditions where no molecular beings could survive. Its drawback was that a consciousness in an ionized state could easily confuse itself with the Universe.

Soon he reached the radiation bands of Mephisto's outer atmosphere. It was here essential for him to tighten his complex to prevent spin-off of essential ions. Fortunately he knew his trade. He easily mastered sufficient plasma-cohesion to ride safely through the radiation belt without excessive weakening. There were other bands below, but most of these should not be so difficult or dangerous. There was no serious risk of being converted into uncontrollable photon reactions short of the M1 and M2 layers.

As he rode the microwave beam through the increasing density of the upper atmosphere, his capacity for ionization gradually became more apparent. Lisbon began to discern the first signs of the visible radiation which characterized the identity of himself and his drums. The intensity of the beam also made it possible for him to more easily identify some of the rarefied atoms which were present in the softening vacuum. From this point on he must be very much alert. He would need every particle of information he could gather if he were

ever to regain the observatory.

LISBON was a conservative. Experience and age had taught him that caution paid. He had sacrificed ion-mobility in favour of the considerably inert characteristics of argon. Increasing ionization induced a blue-green plasma, which though it could not rival the splendour of ionized sodium, was nevertheless distinctive enough to permit his passage to be followed by the telescopes on the observatory.

The certainty of the wavelengths of his own luminance gave him a reference point against which to estimate the spectral responses of other substances in which he was interested. In the absence of instrumentation, such estimates were his specialty. On many occasions such an ability had saved his life.

His passage through the increasing density of Mephisto's ionosphere gradually became a blaze of triumph. The focused microwaves of the observatory's masers opened a broad highway of conductivity, setting him into a flare which was locally brighter than the radiation from Mephisto itself. For a moment he knew the touch of pure exhilaration as he burned down out of the sky.

When he hit the M1 layer, things took a decidedly graver turn. Rein-springer, who was following his course by spectroscope, was quick to issue a warning: At the wavelengths the observatory's masers were currently tuned to generate, the microwave beam was likely to suffer severe attenuation due to absorption by rising gas clouds. Communication could be continued

intermittently through to base level, but for ionization potential Lisbon would have to seek his energy directly from the sources available on Mephisto.

This was Lisbon's first positive indication that the rescue exercise was running into trouble. He was far from happy. The adoption of native ions and energy sources was a frequent but not well-advised expedient, and certainly not one to be indulged in so early in the game. It was permissible only if the *flamer* had an intimate knowledge of the sequence of chemical ion reactions leading into and out of his alternative identities.

Normally such sequences were planned and rehearsed so that the *flamer* was optically able to identify his chosen route by reference solely to the colour of the flames. Where the main keys to elemental identity lay beyond the range of the human eye, guidance was normally given from the broadband spectroscopes on the observatory. In the present case reliable communications from the space observatory were apt at best to be erratic. At worst, they were liable to be completely absent.

While Lisbon was confident that he could accurately determine most of the elements with spectral lines between four hundred and seven hundred nanometres, there was ample opportunity for mistake without confirmation from the spectroscopes. The range of the visible spectrum was far too limited to give him more than partial guidance.

The worst prospect was that Mephisto seemed to contain compounds—even elements—unknown

on Earth. There had been tantalizing glimpses of a whole new range of elements with stable nuclei beyond the fabled 'sea of instability' which characterized the limits of natural and man-made elements. There was even a hint of a mirror-inversion of the known periodic table leading down an orderly paracheimic series with properties outside all speculation.

At the M2 layer Reinspringer's fears were amply confirmed. Partial ionization of the rising gases gave rise to fantastic auroral screens spread into curious curtains by Mephisto's magnetic fields. The fluctuations of these unstable layers caused random attenuation of the microwave beam. Lisbon could cope with curtailed communication, but the loss of beam power so early was dangerous indeed. Penetration of the chemosphere needed ionization potential sufficient to maintain the cohesion of the plasma which gave him his identity. If the beam failed as he hit the chemosphere he was liable to have his ions dissipated round the globe too thinly for recovery ever to be possible.

The major barrier was the hydroxyl zone. In this Lisbon revealed his habitual foresight in adopting an argon identity. Argon had no hydroxyl radical worth bothering about. He passed through the chemosphere riding on a tide of maximum beam intensity. How lucky he had been was immediately underscored by a drastic beam failure only seconds after he had made a safe penetration. From this point on he would be forced to choose his identity from the native ions in the lower atmosphere, and

seek the essential ionization potentials from the energies of Mephisto itself.

Freed now from the limitations of the beam, he was able to inhabit any elements which exhibited the suitably excited states needed to support the requirements of identity and sentience. This should have been a tremendous liberation of the spirit. On this occasion, however, it was also the deadliest of technological traps. Without a sure knowledge of the progressive chemical sequences involved, he could all too easily become trapped in the complexity of the uncharted ionic tides. If he did so, there might be no way back.

LISBON decided to stop and take stock of the situation. The rising flood of radiant energy lent him sufficient power to maintain his identity intact through the periodic failures of Reinspringer's beam. The sight beneath him was enthralling. Gigantic plumes of multicoloured flames leaped from Mephisto's surface and were projected dozens of kilometers into the atmosphere. Beneath the plumes a veritable sea of multicoloured fire seethed and coalesced and ran with the interplay of strange reactions.

When the beam power was strong, he relayed to Reinspringer a commentary describing and classifying the fantastic abysses and mountains of fire below. Where possible he added tentative identification of the reacting elements as judged from the colours of their ionized spectra, though he was conscious of the narrowness of the visible window through which the

human eye could observe. When the beam failed, he hung there considering how best to utilize his limited resources for a rescue attempt he was now certain must fail.

At last he judged it was time to make a move. Reinspringer had recorded all the useful data and there was nothing to be gained by waiting longer. Using the beam path as a guide, Lisbon made his way down toward the now-abandoned 'camp-site'. This was a plateau of solid rock some three hundred metres in length by about fifty metres wide. The term campsite was a wry jest. In mol-space terms it had a temperature sufficient to bring it to cherry-red heat and its cracked and fissured ledges were periodically swept by great flames of incandescent hydrogen. For the *flamers*, however, it had been a useful rendezvous point and a base from which to establish bearings.

"What's the score from the surface, Peter?" Reinspringer's voice was faded and muffled by the interference with the beam.

"Grim!" said Lisbon. "From where I'm standing the flames are rising up like mountain ranges. I've no idea if burning is an apt description of the process, and the fires certainly aren't nuclear as we understand the term."

"Can you see down to the base of the flames?"

"No. It's too far down, and the illumination's too great at the surface. Campsite's obviously the tip of some submerged mountain range. But some of the chasms I can see must be all of five kilometers deep. It gives you an unholy feeling."

Vertigo overcame him. He retired from the precarious ledge on which he had been standing, cursing his inability to take the idea of a possible fall of a few kilometers when he had already descended many hundred times that distance in his transit from the observatory. He was aware of the incongruity, but powerless to escape its grip.

"Still no clues to the reaction mechanisms?" Reinspringer was persistent.

"I tell you, Karl, there's nothing in my physics which explains Mephisto. If you want a clue on where to look, think about the chemical separation of the flames. There must be some mechanism at work which undoes the surface mixing. There's a flame of pure calcium at least twenty kilometers high which has persisted since I left the observatory. How do you explain the generation of a fountain of pure calcium ions from a mix of so many reactive contaminants?"

"Some sort of cosmic-sized mass-spectrometer?" Reinspringer was speculative. "I'll put the theory boys to work on it. But what about my ion-beam. Can you see anything of them?"

By way of answer, Lisbon gathered his drums. Bending low, he beat out a throbbing call, then stopped to listen. There was no response. Undismayed, he continued at intervals, each time stopping to listen for the slightest suspicion of an answer. Crouched like a demon on a red-hot rock in the midst of a streaming hell, his fingers made the drum speak in a voice which, though it was dwarfed by the blistering furies around him, neverthe-

less had the potent tones of selected resonance.

"Pam . . . Pam . . . Pam . . ."
His fingers lapsed into a regular single-beat call.

No answer.

"Pam . . . Pam . . . Pam . . ."
Then silence. Or was there a distant echo whilst his fingers hesitated above the micron-thick diaphragms?

"Pam . . . Pam . . . Pam . . ."

No doubt now. "Pam . . . Pam . . . Pam . . ." Somewhere out in the terrible burning wilderness another drum made answer. "Pam . . . Pam . . . Pam . . ."

Amplified a millionfold by resonance, the answering drum took up the call.

"I'VE GOT a contact," said Lisbon. "Distant but definite."

"So at least one of them's alive!" Reinspringer sounded thankful for even this.

"Keep the beam tuned on campsite," said Lisbon. "I may have to move well away, and I'll need a point of reference. I doubt if you could follow with the beam if I move down into the flames. I'll leave a couple of drums on campsite and communicate with you through time."

"Acknowledged."

Leaving two drums on the rock, Lisbon took up the third and turned his attention outward. His sensitive fingers rapped out a series of interrogatory pulses. Then he held the membrane near his ear and listened to the return.

"Who is it?" asked the controller.

"Andre Beriov. He's on a plateau about two kilometers down from campsite. He exchanged identity for something he believed was four-thirty nanometres iron, then found it wasn't. He can't find a reactive chemical exchange with anything local, and the gas pocket he's in is static. I'll have to go down there and see if I can get him out."

"Take care, Peter," said Reinspringer gravely. "We can't afford to lose you too."

Tapping the drum in a regular series of beats, Lisbon reconnoitered round the edge of campsite. His acute ears and the clever design of the instrument enabled him to distinguish the particular direction in which Andre Beriov was located. Here a great updraught of incandescent hydrogen swept up against the solid rock and formed a seemingly impenetrable barrier. Gaining as much ionization potential as he could acquire, Lisbon leaned carefully against the red-hot wind, and was surprised to find its velocity was so low that he could climb through it easily.

Climbing in ion-space was not the physical task it was on mol-space Earth. Weight was a relative matter, dependent mainly on how tightly concentrated was the plasma in the energy package containing his identity. He could fall great distances in relative safety if he could keep his velocity low. The termination of a fall was critical, however, and inertial effects could easily exceed his ability to keep his identity intact. If physical or thermal forces became too great, they could strip the atoms out of the delicate energy shell and dissipate

them very thoroughly throughout the surrounding winds. He therefore proceeded with great caution, using tenuous handholds to support his nearly weightless body, almost in the manner of a mol-space climber in the gravity of Earth.

About two kilometers down, with the high fire-masses streaming above him like vertical walls, he came across Andre. In a cleft in the rock was trapped a pocket of violet flame, and clearly in the region stood Andre Beriov, clutching his precious drum and looking outward. His face was a picture of the faintest possible hope. His relief when he saw Lisbon was a wonderful thing to see.

"Thank God you've come, Peter! I thought I was here for eternity."

"Keep calm," said Lisbon. "You got into that identity, so there has to be a logical route out."

"Believe me, I'd not still be here if I could find it."

"And you thought your identity was four-thirty nanometres iron?"

"I staked my life on it."

Still in his argon identity, Lisbon prowled around the fringes of the gas pocket and out to where the leaking traces of the gas mingled with the incandescent hydrogen. When he returned his face was enlivened by a trace of wry amusement.

"Come on, Andre! You're going home."

"You mean you've found a route?"

"Yes. You're not in an iron identity at all. You were trapped by your own precision in spectral analysis. Sure you were in the four-thirty nanometre region—but it's a

calcium identity, not iron. Look at those red fringes. That's calcium at six-eighteen nanometres. Iron has no useful bands nearer than green at five-twenty-seven. There's hydrogen outside. You can take the hydride route straight through to hydrogen, and ride the flame up to campsite. The beam's focused on campsite, so that's your route back to the observatory."

The simplicity of the trap which had nearly cost him his life appeared to stun Beriov momentarily. He started to protest, then followed out the clues which Lisbon had set before him, and suddenly grinned with great relief.

"Thanks, Peter. Now I know why they call you the Ion Explorer. You coming up too?"

"Not yet. There's another five of you down here somewhere. They sent the backup team in when you and Loya failed to show. With a bit of luck I may find another one or two in no worse a predicament than yourself. Have you seen anything of the others?"

Beriov was concerned. "None at all I'm afraid. Only Loya and I were down here at the time I became trapped."

Lisbon watched speculatively as Beriov made the hydride transition into the red of a six-fifty six nanometre hydrogen identity and, with a wave of his hand, rose up through the great flame toward the surface and the route home. If Beriov wished to remain in the profession it would take a two year refresher course in training environments before he would again be assigned to an expedition. Lisbon's fingers tapped out a message to be re

peated for Reinspringer's benefit, communicating through the drums he had left on campsite.

"Berio coming up. He could be the lucky one."

THIS DONE, Lisbon again turned his attention to the task of trying to locate the other members of the expedition. For hours on end his drum notes beat out into the realms of fire without once receiving a single answer in return. During this time he was making his way slowly along the face of the peak, the summit of which was campsite. Finally he came around the end of the flame-drowned mountain and was able to survey new territory.

Here again hydrogen was the predominant environment, but bright flares of sodium, potassium and many of the rare-earth elements were particularly abundant. The preponderance of rare-earths reminded Lisbon that the distribution of elements on Mephisto was untypical of what was normally to be expected in galactic bodies. Mephisto was a thing apart, and undoubtedly contained a great many surprises. No visual evidence, however positive, could ever be trusted at face value.

On the far side of the campsite range Lisbon made a new contact. His drum messages now growing in urgency received an unexpected reply, which he hastened to confirm. His report to Reinspringer was terse.

"Kem Radshorn believed trapped in parachemic identity. Recovery prognosis doubtful."

The new drum beats were located well out from the comforting solidness of the campsite mountain. In order to traverse this region Lisbon knew that he would have to sacrifice his precious argon identity and adopt an ion native to the region. He chose this course with great reluctance, because of the reactivity of the available native ions and the strong possibility of becoming enmeshed in some irreversible chemical reaction. Denied physical support, however, there was no other way.

Finally he opted for blue hydrogen at four-eighty six nanometres as being the safest available choice. The argon-hydrogen exchange was not easy, there being no reactive interface. He had to rise high into the atmosphere where the ion density was low, and to make the identity exchange virtually a molecule at a time. Down in the flux below, such a maneuver would not have been possible. With the partial pressures being so high, the energy required to control the delicate transportation would have been inadequate to preserve his identity.

It had been a long time since Lisbon had swum in and been part of a great hydrogen flame. In the training environments it had once been his great joy to swoop and leap with the vagaries of such a mobile flare. Now he found its very mobility an embarrassment and a danger. Only by careful control of his plasma form could he make the journey at all.

About a kilometre out, there rose a plume of gaseous ions whose singular beauty was remarkable. Blue,

green and orange ion components twisted together in a flame whose magnificence outshone by far the relative transparency of hydrogen. It was from this column that the drum beats came. Immediately he came close, Lisbon realized that much was wrong. Whilst his optical range covered only a limited part of the spectrum, intuition told him that no such element should have existed. This was a chemical outside the range of human physical knowledge.

Swimming in the sea of incandescent hydrogen, Lisbon made a wide arc around this singular plume, examining it from all sides. He could find dilution, but no interaction with hydrogen, nor could he tell much about the three ion-streams that intermingled. He tried to contact Reinspringer for a spectroanalysis of the region, but doubtless hit a period of beam blackout, because the controller did not reply, and it was probable the message had not got through.

Doubtfully, Lisbon began a spiral descent around the plume looking for signs of the flamer whose drum beats assured him was trapped within its fiery limbs. He had to drop down nearly a kilometer before he found him.

KEM RADSHORN, one of the backup team, was one of the new breed of *flamers* just emerging from IEC training. His introduction to ion space would have been lengthy and scientific, and drawn heavily upon the experience of the older *flamers* such as Lisbon himself. Lisbon marked it much to the youngster's credit that he had not

panicked and thus risked dissipation, but had concentrated on maintaining his energy shell intact as he tried to find a route through the intractable chemistry which bound him into his present position.

Radshorn looked at Lisbon from his fiery prison with patent disbelief. Unlike Beriov and Loya, who had worked with Lisbon in the past, Lisbon was merely a name in a textbook to the younger *flamer*. Radshorn knew that help from his own team was barely to be hoped for—help from a complete stranger in ion space scarcely stopped short of a miracle.

Drawing the drum close to him, Lisbon spoke.

"How'd you get into that identity?"

Radshorn pointed downward. "At the base. I heard Loya's drum and went after her. I thought I was going into multi-spectral mercury, but it can't be anything of the sort."

"There was a route in. There has to be a route out."

"There was a sodium flare at the time. I think Loya was below somewhere and disturbed something. I went clean through sodium identity into this; then the flare died and I couldn't get out again. I've been unable to find a reactive interface since."

"I'm going down to investigate," said Lisbon. "If Loya disturbed sodium, perhaps I can do the same. If you see the opportunity, take it. Don't wait for me."

"Check! Who are you, anyway?"

"Peter Lisbon." The *flamer* did not wait to explain further. From

somewhere deep below him he had heard the beat of a drum.

"Pam . . ."

It was only a single beat and might have been accidental. If there was a drum there, however, there should be another flamer not too far distant. Possibly Loya . . .

"Pam . . ."

If he judged the sound aright, the drum was knocking on something solid rather than being struck by a hand. He answered rapidly but received no reply.

He dived deeply but cautiously, not knowing how far he could safely fall before he struck the bottom. In this matter he was wise, because he had less than two hundred meters to go before he came down into the skeletal forest.

THE SIGHT was so arresting and unexpected that Lisbon had to stop and take stock. He was in a valley at the foot of two vast mountain ranges, one of which was campsite. The atmosphere was mainly incandescent hydrogen, but populating the valley appeared to be a forest of skeletal, sponge-like trees whose ashen-white surfaces faintly glowed with every colour the spectrum could devise. His first thought was that these were rock-faults laid bare by the removal of the surrounding material by the streaming hydrogen. The regularity of their shapes, however, prompted him to look for another explanation. The singular thought which occurred to him was that these were living, replicating plants.

The notion of indigenous life under these conditions worried him. He began to think of duplica-

tion in the sense of growing crystals rather than replication as with living organisms; and finally to wonder if there was a fundamental difference in systems in which a seed could define the characteristics of that which grew from it. The divisions between life and non-life were thin indeed.

Brushing a piece of skeletal sponge from a tree as he passed, he was rewarded with a surprise flare of blue four-sixty three nanometres neodymium, which burst from the tree where the inert ashen surface was broken. Intrigued, he tried another tree and got the green of five hundred and twenty nanometres cerium. He began to suspect that these individual plants were feeding on the microtrace contaminants in the hydrogen wind, and that they were capable of selective absorption of the ions which they adopted as their specialty.

This factor came as no great surprise to him. Plants and bacteria on Earth were capable of fixing atmospheric nitrogen, and many species—including Man-fixed carbon, calcium and many other elements from the environment. Ion-exchange resins, too, had an order of preference in what they selected from their environment. The divisions between life and non-life were hair fine and very subjective.

So far there was no sign of the drum he had heard below him. The flame in which Radshorn was locked appeared to have its origin in a rocky cleft near the edge of the campsite range. He used this blow-hole as the center for his investigations, and moved around it through the skeletal forest looking for evi-

dence that another *flamer* had been there.

Shortly he found a clue. From each of the trees which he passed, a small piece had been broken. Even now the fractures were still giving off a characteristic flare—lithium red, europium blue, cerium green, and a magnificent violet holmium. He was not sure if the trail markers were deliberate or whether they had resulted from pure curiosity on the part of a *flamer* who had passed this way before him, but signalling as they did with such a magnificent display of coloured fire, he had no difficulty in following the direction.

On the slope of the hillside opposite campsite the nature of the vegetation changed considerably. Here the sponges were much larger and formed misshapen islands like vast skeleton apple-dumplings. The nature of their ion preference was altered too. The first had a fracture which flamed tongues of calcium, violet and red. Slightly up the slope the beautiful purple of potassium issued from a broad scrape along one side of the plant. The apparently deliberate nature of the damage and the position of the element in the periodic table caused Lisbon to pause and think. He knew suddenly what he was looking for—a sodium tree.

When he found it, it was not so much a tree as a plantation. A whole area of the incandescent rock face was covered with the white skeletons of isolated sponges, and one of these had been almost completely crushed. Significantly, moving slightly on the hydrogen wind, was an octahedral drum. Experimentally Lisbon kicked a fragment

of the sponge, and obtained a magnificent sodium flare. Then he took up his own drum and addressed the *flamer* caught in the fire-plume above.

"Kem—are you in contact?"

"Listening."

"Can you set your direction from my drumbeat?"

"Affirmative."

"I've located a source of sodium. I think I can drive it into a flare. You got in there through a sodium route, so there must be a reactive interface with sodium. Ready to try?"

"Affirmative. Will the flare be in the same place?"

"Within a few metres."

"Give me a minute to get into position. I'll tell you when I'm ready. Any ideas on what route to go for?"

"If you can find enough oxygen, the hydroxyl route is safer. Otherwise go through sodium hydride. But whatever you do, try and make it right through to a hydrogen identity."

"Check! I'm ready now."

Looking at the crushed sodium tree, Lisbon decided there was not enough undamaged material left to guarantee a substantial flare. Alongside, however, was an even larger sponge which an exploring foot told him contained sodium. This seemed to promise even better results, and fortunately lay even closer to the plume which contained Kem Radshorn. Thus there was little danger of the flare being out of Radshorn's reach. As soon as he could see the trapped *flamer* in the green and orange of the plume, he strode into the middle of the

sodium tree and began to destroy it with his feet.

This was an action more easily imagined than performed. The low density of his ionized plasma identity scarcely gave him enough weight to break the ashy sponge fragments, fragile though they were. Somehow he managed to mash sufficient of it to provide a wide and high flare of sodium ions, which swooped in a living yellow fire around him and licked hungrily at the base of the unidentified plume. Such were the radiant contrasts that he was unable to see the progress of his rescue operation. His relief was great when a few moments later Kem Radshorn, now in an orthodox hydrogen identity, swam down beside him.

"It worked! It worked!" Radshorn's relief was ecstatic. "I owe you a great deal for this, Peter."

"Forget it!" said Lisbon. "You can best pay me back by not getting into trouble on your next tour. Right now I want you to go up to campsite and get off-planet before you get locked into something else."

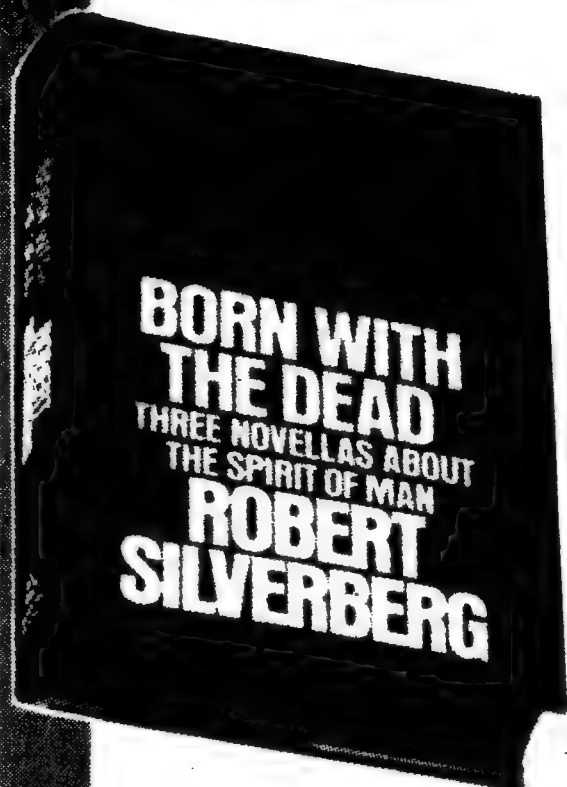
Radshorn's face fell. "With respect, I could be more use helping you to look for the others."

"No. You'd be a liability. Your training's too scientific, and there's too many unknowns here. The only way to tackle Mephisto is to respond to the agony in your guts. And they can't teach you that in a training environment."

"Sure!" Radshorn took the critical point without complaint. "I guess we've all got a lot to learn."

He saluted reluctantly, and began to swim upwards through the

3 novellas
by one of
the top
S-F writers
in the world



"It seems amazing that a writer as prolific as Silverberg should be getting better and more thoughtful as he goes along, but the three novellas that make up this book prove that to be true. Each takes a fairly far-out theme related to morality . . . and treats it with great interest, and a kind of scholarly delicacy, and a great deal of creative imagination."

—*Publishers Weekly*

\$5.95, now at your bookstore

**RANDOM
HOUSE** 

great hydrogen flames, keeping well clear of the unknown plume which had been his fiery prison. Lisbon watched him go, and tapped out a message on his drum for Reinspringer's benefit.

"Radshorn on his way up. Some theories on ion separation beginning to emerge."

Almost immediately the drum began to throb with a message from the controller.

"Great work, Peter! Andre Beriov recovered two more of the backup team in disorientation-shock near campsite. Only Loya and backup man Ray Lockett still on Mephisto."

DISORIENTATION shock! The news grimly amused Lisbon. Disorientation shock used to be frequently suffered by novices when presented with mixed ion-streams in a training environment. At one time it was an accepted hazard of learning to handle ion identity. Latterly, however, training environments had become more sophisticated and humane, and disorientation shock in training was now a rare occurrence. In Lisbon's view, every *flamer* who was going to do a useful job in natural ion environments would one day enter a situation where multiple-choice disorientation would overload his senses. Far better to become accustomed to this in the relative safety of a training environment than in such a potentially deadly and uncharted sea of ions as the surface of Mephisto. The notion, however, gave him a new line of approach.

In disorientation shock, the *flamer* was unable to respond to a

drum call. For this reason he could not be located by standard emergency procedures. The most likely place to find a disorientated backup man was in the hydrogen flare around campsite. Significantly, this was where Beriov had already located two of them. By the exercise of an old drum trick, Lisbon hoped he might locate the one still missing.

He allowed the great hydrogen flare to lift him towards the surface, carefully reducing his plasma density to give himself just the right and safe rate of climb. He surfaced in a huge belt of flame that subsided rapidly. Once he would have been overjoyed to be in a flame tongue leaping free through the atmosphere. Now he found the experience a danger and an irritation. If human beings had been meant to live like flames, he thought, then the Maker would have seen them born in ion-identity. The deliberate assumption of the ion-state was part of the great impertinence of Man, who thought he could ape the gods. The trouble was that Man was still pathetically unaware of how much he did not know about the universe.

USING campsite as a center for his activities, Lisbon rode the huge plumes out to about three kilometers distance. From here he began to move in a vast circle which had campsite as its center. All the while he held his drum at his ear and tapped a solemn beat with his finger.

"Pam . . . Pam . . . Pam . . ."

The spare drum on campsite returned the beat loud and clearly.

"Pam . . . Pam . . . Pam . . ."

In this manner he continued to traverse the circle, using the great flame slopes to conserve as much as possible of his energy. When he had covered nearly half the distance around the perimeter he heard something for which he had been listening. A drum between himself and campsite was splitting the beat and thereby betraying its direction.

"Pam-am... Pam-am... Pam-am..."

Methodically he set up a zig-zag search pattern, working his way toward campsite. A kilometer in from the perimeter he found the drum. Less than fifty meters away he found the missing backup *flamer*. He, too, was in a state of disorientation shock. Fortunately his nitrogen identity energy shell had remained intact. Using his drum to communicate with Reinspringer, Lisbon directed that the microwave beam be re-sited on his present position.

The movement of the beam was accomplished with alacrity. Soon the broad shaft of energy opened up a magnificent luminant highway into the sky. With the backup *flamer* still unconscious, Lisbon knew he would have to shepherd the identity package at least as high as the ionosphere before it could be safely entrusted to the beam for retention until it could later be collected.

He took this decision with great reluctance. He knew that once he had negotiated the various bands and layers of the upper atmosphere he would be very reluctant himself to make a return. Nevertheless, Loya's drum lay down there in the

skeletal forest at the bottom of the hydrogen sea. If Loya's drum was there, the chances were that she herself was not far distant. One thing he could not do was abandon an experienced *flamer* like Loya while any faintest hope for her recovery remained.

"Karl—I've got Ray Lockett here. Unconscious like the others. I'll have to clear him through to the ionosphere, but I don't want to come right back to the observatory. I must have one more look for Loya."

Attenuation caused the beam to wane for a period, and Reinspringer wisely held his reply until the full beam strength had been restored.

"I take your point, Peter. Radshorn's in good shape and demanding to be allowed to help. I'll send him down to meet you, and he can fetch Lockett up."

"Good thinking! And start preparing a blast for the IEC training executive. Three out of four backup men falling in disorientation shock is little short of criminal. Theory's not enough. It's the human animal which has to be conditioned to take the stresses."

"I'm going farther than that. I'm demanding a full-scale disaster enquiry. Those desk-bound theorists at home have no idea what some of these deep-space working conditions are like. It's about time somebody jerked the rug out from under them."

Mollified, Lisbon began to survey the problems of the ascent. Since he was unconscious, there was no way that Lockett's identity could be exchanged for a less

hazardous one such as an inert gas. Nitrogen would be adequate only if the beam power remained strong enough to maintain the identity whole in the face of the high temperatures and low pressures encountered in the upper layers. Lisbon's own hydrogen identity was also a risk factor. The hydroxyl zone was their major hazard. If the beam should fail at the wrong time the results could be complete dissipation. Nevertheless, there was no alternative.

THEY were lucky. By some trick of circumstance the periodic failures of the beam coincided almost exactly with their progress through the less critical regions. Through all the major bands the beam held strong and true. In less than twenty minutes they reached an altitude free from most of the planet-dependent effects. Lisbon was able to halt and wait the arrival of Radshorn from the observatory.

In the low ionization of this rarefied stratum, Radshorn was almost invisible. What could be seen was a broad grin of welcome on his face, and a look of genuine concern when he took charge of the unconscious backup man. Lisbon was pleased to note the youngster had opted for an argon identity. The lad was obviously eager to learn such points of technique, and this was one trick he had been quick to adopt. Suddenly Lisbon did not feel so bad about the future of *flaming*.

Having been relieved of his charge, Lisbon once again turned to make a descent to Mephisto's surface. This time he was less than fortunate. His hydrogen identity

was badly adapted for survival in the face of such unreliable beam energy. More than once he was saved from total dissipation by the mere vagaries of chance. Profoundly dissatisfied with his performance, he broke from the beam path at the earliest opportunity and leaned hungrily toward the welcome energy reserves of Mephisto's bounteous fires.

His critical situation negated his natural caution. When he could find the energy he used it—building up a strong red hydrogen plasma with a reckless disregard for wastage as he burned down toward campsite. On the beam he heard Reinspringer whistle. No further comment was necessary. They both knew that Lisbon's progress was untypical and prompted by stronger motives than those of a mere rescue in ion-space.

At campsite, Lisbon knelt again with his drums.

"Pam . . . Pam . . . Pam . . ."

He was calling uselessly against the faint hope that there might be some return.

"Pam . . . Pam . . . Pam . . ."

No answer whatever. No reason to suppose there would be. He took up the drum and went to the edge of the campsite, looking down toward the direction of the skeletal forest where he had found Loya's drum.

"Pam . . . Pam . . . Pam . . ."

If ever a note of concerned enquiry could be conveyed by a finger beating on a drum, this time was now. He raised the instrument to his ear and listened, not expecting to hear anything and being surprised by a single answering beat.

"Pam . . ."

It was impossible, yet he had heard it. Perhaps Loya's drum was again moving in the hydrogen wind, tapping itself against something solid. Perhaps . . .

LISBON knew he had no choice of action. He had to go down into the abyss again, down to the skeletal forest, to search with all the cunning and skill and imagination that only years of flaming could bestow. In such an infinite sea his chances of finding Loya were slight, especially as she was now without her drum. He felt compelled, however, to find out what had happened to her, and why. *Flamers* such as Loya were not to be lost without good cause.

The plume which had trapped Radshorn was still burning brightly. The sodium flare which had been released at its edge had now burned out. Taking a broad, spiral course around the plume, he dived ever more deeply down through the hydrogen flame and stopped only when the white crisp bones of the skeletal forest appeared beneath him.

The two crushed trees remained as a mute reminder of the previous passage of men. There was something of a reproach in the way these two broken organisms had accepted their lot and were already attempting to repair the damage. The speed with which the brittle tracery was being renewed made him pause in wonder—in a few days the wounds would all be healed. If all the sodium was being extracted from the traces in the hydrogen wind, then he had mis-

judged both the concentration of atmospheric sodium and the capacity of the adsorption process to recreate the massive form of the element in the presence of such a hostile environment.

Apart from the drum, there were no clues as to what had happened to Loya. The damage to the trees stopped at the point where the first sodium bush had been destroyed. In the vain hope that he might have been reading the trail in the wrong direction, Lisbon retraced his path to the point where he had first descended, and then began to explore the terrain beyond.

This path took him over a ridge and to a point where the valley floor dropped away into a broad ravine. The skeletal forest had itself been a place of wonder, but this new gorge was a place of sheer enchantment. From wall to rocky wall, every available surface was covered with skeletal flowers, but flowers of such vast dimensions and beautiful proportions and ethereal radiance that Lisbon could have imagined no more beautiful a place. Here, drowned under a sea of incandescent hydrogen, was the proof that life could prosper and survive under conditions which were way beyond anything he had previously conceived as credible.

There was no doubt in his mind that these life-forms were 'organic', but now his conception of organic extended beyond its Earthbound connotation of being related to carbon chemistry. Here was a more versatile life-form, beautifully adapted to the conditions under which it had evolved. Exactly what gave the plants their selective

capacity to adsorb only ions of a single element, he did not know. He suspected it was somehow associated with their inert ashen skins. If he read the signs aright, the individual plants probably had the capacity to select even single isotopes of a particular element, leading to purities of concentrated isotopes on a scale undreamt of on Earth.

Under such conditions of continually alternating flux and refinement, it was no wonder to him that Mephisto had its own brands of chemistry. The insistent pressures of life-forms vying for a niche in the ecology could lead to bizarre modes of specialization. Constant re-flux and refinement of the elements gave ample scope to the chance concentration of the one atom in a hundred million which fell into a class beyond the naive constraints of the periodic table. Mephisto performed more chemical reactions in a second than Man could achieve in a thousand years.

If Loya had passed this way, she had left no signs in this unearthly grotto. Unlike the trail in the skeletal forest, here no luminous markers had been left for him to follow. It was, of course, possible that she had swum up into the hydrogen winds to examine the scene from above. To investigate this possibility, Lisbon swam up to just beyond the ceiling of the 'vegetation', intrigued by its variety but learning nothing of the fate or whereabouts of the missing *flamer*.

The notion of variety began to worry him. Somewhere below or in the new forests he was beginning to discern on the distant slopes, was

one or a group of plants capable of selective adsorption of virtually any element a *flamer* could use as an identity. The only probable exception was the hydrogen carrier itself. There was no doubting the capacity of the plants to force the selected element out of reluctant compounds. What if they had the capacity also to draw the selected ions out of an ion identity?

Cursing himself for not having thought of the point before, he seized his drum and sent an urgent message to Reinspringer.

"Must know Loya's last ion identity."

Reinspringer's attention was prompt. "Query acknowledged. Checking now."

Lisbon however was already moving back along the gorge, his expression grave. He had guessed what the answer must be. Loya's favorite identity was the classic D-line resonance of sodium. It was her great joy to burn down out of the heavens glowing like a glorious sunlit beacon. Such was the definition of the sodium plasma that even the strands of her hair would become visible as she descended like a golden goddess. He had always suspected that she chose sodium not so much for its ionic properties as for the marvellous luminance it gave to the identity. And Loya had tangled with a sodium tree . . .

Reinspringer's voice came back abruptly.

"Loya went down in the five-eighty nine nanometre sodium doublet. Andre was the last to see her, and she was still in sodium then."

"That's what I figured," said Lisbon. "If she remained in sodium I can't hold out much hope."

"Copied for the record. Take care of yourself, Peter."

LISBON was nearly halfway back up the gorge when he met a circumstance which made Rein-springer's concern seem less than a platitude. Without any sort of warning, a mighty surge current of superheated hydrogen rammed him from below. The velocity of the blast was such that he was turned and tossed like paper in the wind, and had to fight to preserve intact the precious energy shell that contained his identity.

Worse was to come. After the hydrogen shock wave came a massive yellowed-green flame which he instantly identified as five-forty eight nanometres boron. In the face of such intense ion pressures, he fought and nearly lost the battle to remain in hydrogen. Such an all-embracing concentration was exceptional in any sort of work, and suggested that some highly unusual event had taken place below. A short while previously he had passed above the quiet and beautiful flower-fields in the gorge and, once he had regained his equilibrium, he was immediately prompted to dive to the source point to see if he could find the reason for this critical ion storm.

This was a decision which nearly cost him his life. As he plunged down on the fringes of the boron flame he was engulfed in a second flare, this time of oxygen, which ran from red to purple and reacted explosively with the hydrogen in

which he swam. Fortunately he was slightly outside the main reaction sphere, but the force was sufficient to give him slight concussion and left him drifting momentarily helpless toward the valley floor.

His touchdown on solid rock helped to bring him to his senses. Looking around, he was amazed to see that a large area of what had previously been flower-populated slopes had been utterly devastated by some vast reaction. Unnerved at first, he was almost afraid to theorize, let alone explore. Wide tracts formerly occupied by flowers had been stripped bare, and only the white, inert ash still settling on the rocks gave evidence that the plants had ever existed. The concentrated elements of which the 'vegetation' had been composed had been released in the explosive flare which had destroyed them.

The incident told him much about Mephisto. The life-style of the plants was fascinating enough. The death-style was traumatic. At some point in their development, conditions would become such that the reaction of their concentrated elements with the atmosphere or their neighbors would be unavoidable. Catastrophic destruction was the result, probably with a similar effect on unlike vegetation in the immediately surrounding area. Thus was born the bright ionic flames which characterized the surface of Mephisto and created the enigma.

Now he had seen the death throes of a few of Mephisto's fantastic plants. He would have liked to have remained to see what mysterious seed began the renewal. Some pri-

mary catalyst presumably in the cast-off ash would trigger the birth of a new plant generation. These would grow to fruition straining the hydrogen winds for the precious elements which that seed alone was programmed to receive. Here was Nature no more nor less marvelous or mysterious than that on his native Earth, but it was an object lesson in understanding the universe—Man's comprehension of what constituted life was sketchy indeed.

"You all right, Peter?" Reinspringer's voice was relayed by the drum. "We saw some big new flares in your direction."

"I was lucky," said Lisbon. "Some of the local vegetation blew its top. I'll be making a report on it later. But I think I know what makes Mephisto tick."

"Still no sign of Loya?"

"I'm just going back to where I found her drum. I've a theory about what might have happened to her. I'll try to check it out."

As he passed on through the gorge he found that about a third of the vegetation had been destroyed in the blow-up. He could only speculate as to what chemical reaction had started it, but it was obvious the occurrence was not unusual. This was merely part of the natural life-cycle. Beyond the gorge, back in the skeletal forest, things remained unchanged. Responsive only to traces of their own chosen elements, the mighty sponge trees were unmoved by the events which had taken place over the ridge. Indeed, the two broken sodium trees were making good progress with their repairs.

Lisbon took up Loya's drum and threw it into the middle of the first tree which had been broken. It landed on a slightly convex surface and moved slightly in the hydrogen wind.

"Pam . . ."

Then he took up his own drum and sent out one last desperate appeal.

"Pam . . . Pam . . . Pam . . ."

He received but a single drum pulse in return.

Leaving Loya's drum where it had fallen in the tree, he turned sadly and made his way up through the hydrogen sea toward campsite. There was nothing else that he could do. Either Loya had been adsorbed by the tree or else had been dissipated as the flare which had trapped Radshorn. Whichever was the case, her identity was beyond recovery. On campsite he took the spare drum with his own, but left the third one in a cleft where it would not be washed away by the tongues of hydrogen flame. He knew this action was slightly irrational, but Reinspringer had once been a flamer himself and would understand the motive.

"Mission abandoned," he signaled the controller. "There's nothing else to be achieved down here."

"Understood," said Reinspringer on the beam. "Take it gently through the chemosphere. There's a big atmospheric ion storm up high."

Lisbon waited until the beam power hit maximum then began his journey up the highway in the sky, back to his return to mol-identity. As he climbed high above the mighty fires of Mephisto he looked

back and was suddenly no longer afraid. In retrospect it had been one more challenge in a long and remarkable career.

“OYA?” asked Reinspringer. He already knew what the answer must be, but needed to hear it said.

“She’s gone. No hope at all.”

The controller met Lisbon’s eyes gravely, then turned back to his reports. As he made the entry in the log his hands were shaking. This was the only outward sign of tension, otherwise Reinspringer’s acceptance of the fiction raised no hint of question. Nevertheless he shared the doubts that haunted the reaches of Lisbon’s mind. The controller reached for the clip of death certificates and began to make out the fateful document. Halfway through, his shaking fingers dropped the writing stylus, and he looked at his hands accusingly.

Lisbon walked away. There was nothing he could do to help Reinspringer. In any case he had his own spectres with which to contend. Death in ion-space was an artifice designed to placate the public. It did not actually happen. In ion-state, the only end was dilution—the dispersion of the identities throughout such a volume of diluents that they became too thinly spread for reconstitution ever to be possible. The *flamer* became literally part of the restless atmosphere which circled whichever alien sun or planet they had attempted to explore.

But what of the sentience? Did

the luckless ones ever truly die? Convention insisted that death certificates be issued as soon as recovery was no longer possible. Theorists postulated that sentience faded in proportion to the degree of dilution. With more experience of ion-space than any person living, Lisbon was not too sure.

Sometimes when he was on a rescue mission, crouched on some alien campsite, drums beneath his hands, he was certain that he could detect the voices of *flamers* who had been diluted long before. Occasionally other fingers danced a hesitating rhythm, alien fingers, pioneers from other races and other times trapped in the same dissolute eternity. In the restless dance of flames, in the anguished howl of hurricanes, or in the serenity of great skies, Lisbon could detect them still.

And for Loya the ordeal would have an even more fateful twist. Like a phoenix ever renewed by fire, her sodium identity would be extracted and concentrated by the trees of the skeletal forest. Then in the fury of an alien storm, her ions would be released to begin anew the fantastic dance with the flames of a planet which was not a planet. The cycle endlessly repeated. It was for this reason he had left her drum by the sodium tree and another one on campsite. Somewhere down on Mephisto he was certain Loya still lived, hopelessly dissipated but sentient. Or had it merely been the wind which rolled her drum against the tree?

It was considerations such as this which caused him to have bad entries . . .

SUCH IS FATE



Sancho Jones Chu was an exceedingly ordinary mortal, but his destiny was something else again!

ARSEN DARNAY

YOU CAN look at this matter from a number of perspectives.

From one point of view it all began when an occasional sailor, soldier, handyman, and bum of obscure origins and indeterminate race, by name Sancho Jones Chu, on an impulse (he was very impulsive) decided to consult a gypsy.

The year was 1998 and the place was Houston.

The day before the LNG Tanker *Binivu*, flying a Liberian flag, had docked in the harbor to take on a cargo of liquefied natural gas (LNG), preparatory to a trans-pacific voyage to Tokyo. LNG had come of age since the 1960's, and *Binivu* was one of three hundred ships that moved frozen, cryogenic gold over the main.

Soon after the tanker docked, it discharged part of its crew on shore leave, including Sancho Jones Chu, and Chu departed to partake of the questionable pleasures of Houston, which left him, by the following morning, a little groggy and red-eyed and depressed, momen-

tarily wondering what it was all about.

And in that moment, most serendipitously, his eye fell on a clumsily painted sign. It showed the open palm of a hand—white against a red background—and below the palm black letters told him (he had to puzzle them out laboriously, being of limited education) that Madam Sna stood ready with a psychic reading for a mere \$8.50 or, say, the equivalent of a one-egg breakfast with toast and coffee.

He had no stomach for breakfast anyway, had never had his fortune told, had nothing else to do, and so after a moment's examination of his own palm (to see if maybe he could do the job unaided) he went through the door releasing a clanging bell as he did so.

He emerged again an hour later, twenty dollars lighter, but walking on air. He was not exactly a changed man; his eyes were still red and his breath still sour; if anything the black stubble on his face was a little longer; but there was now a new gleam in his eye, a bounce to

his walk. He pushed his knit cap to a more rakish angle and broke into whistling. He whistled a new ditty called, "The mermaid's mother is a sure-fire gong."

He was not a changed man, but he knew himself to be, in an obscure sort of way, a man of some mysterious importance. The gypsy had been sure of that.

Framed against a black curtain, her greying hair half hid by a red silk cloth, her golden earrings aglimmer in dim light, she had taken his big rough hand into her narrow brown one and had looked at his palm with professional penetration.

After a moment her dark eyes had stared up at him in puzzlement. "Oh," she'd said, "this is very unusual, very, very unusual. You'll live a very, very, very long time, Mr. Chu. You have a very unusual fate, one in ten billion. I can't say what and I can't say how. But if you're willing, we could try the Tarot and the crystal to get a little more information."

So, after she explained to him that she'd never seen a man whose lifeline ran all the way to the tip of his index finger—the lifeline indicates time spent in this earthly dimension, she'd said—and after they spent some time negotiating the price of Tarot and crystal; and after they settled on a lump-sum fee of twenty dollars; she's reached for the cards.

The Tarot confirmed the message of the palm. The gypsy was genuinely astonished by the cards. She repeatedly pointed at now this, now that part of the spread with an earring-jangling shake of her head.

A famous man he was, would be, she murmured, more to herself than to him. His life, the length of it . . . She couldn't, no, she couldn't grasp how Mr. Chu could be so long lived, a regular Methuselah. He wanted to know the exact year, but on that score, she said, the cards were silent.

They turned next to the crystal. She set up the ball in the middle of a table covered by a cloth whose edges showed the signs of the Zodiac. She dimmed the lights even more. And as Chu watched with half-open mouth, she went into a trance. Then, slowly, in hesitant bits and pieces, she conveyed the essence of the vision.

Ice . . . ice . . . cold . . . bitter cold, she said. In the crystal Madam Sna saw crystals of ice. She saw or felt (she shivered at the immensity of the cold) such a depth of temperature, such an absence of heat, of warmth, that the mere observation of it all turned her lips blue. In the midst of that crystalline opposite of inferno, she thought she saw the form of Mr. Chu slowly, stiffly tumbling. And so she broke her concentration, and she summed it all up for him.

"Mr. Chu," she said, "you'll live to an immense old age. You'll be a sensation before you're thirty. Many famous scientists will seek your counsel. And you'll die someday by freezing to death."

And so Chu whistled merrily as he walked. He crossed the street on a red light. Two cars bucked and screeched as they swerved to avoid running him down. He smiled at the angry honking. Nothing could harm him. He'd live to be a hun-

dred, no doubt about it. And next year, when he turned thirty, he'd already be a sensation. As for death by freezing, that was a long, long ways off.

He didn't wonder *how* he'd become a sensation or *what* the famous scientists might want to know. He very seldom wondered. This morning, momentarily, he'd wondered what it was all about. And that'd been entirely sufficient for a while.

NOW LOOK at the matter from another perspective, that of Captain Bartholomew Smith, a small, portly man with a neatly blocked salt-and-pepper beard.

Captain Bartholomew Smith commanded the LNG Tanker *Binivu*. He was very close to retirement. His pension was in his pocket. He was a widower and childless. Forty years at sea had destroyed whatever enthusiasm he'd once had for oceanic magnificence; he longed to be free of the brine. Already his interest was elsewhere; he had a nice packet of interesting investments, some very high risk, some fairly safe. His heart was on the land, where his money was, even as he plowed *Pacifica* with a load of LNG.

One of Captain Smith's investments was closer to his heart than any other, and as fate would have it, his favorite was also the least solvent of his ventures. It couldn't even be called a venture, truth to tell. As yet it hadn't gotten off the ground. It gave the Captain many hours of thought as he paced the deck of *Binivu* on the way to Japan and back . . . on the way to Japan

and back. He felt a certain responsibility for Eternity, Incorporated, being its single largest stockholder. He wanted EI to succeed, and not only as a money-making venture. He hoped to be one of the clients of his own company when he died.

EI had everything: cold storage bunkers, a laboratory, and equipment. It had a front office, an answering service, and nice stationary with an impressive letterhead (it featured the mathematician's symbol for eternity, the lazy eight). EI had a full time salesman, a part-time secretary, and a technical director, a certain Dr. Hatfield. Hatfield was not a medical doctor, strictly speaking, but the state had no objection to his handling of the dead.

But Eternity, Incorporated lacked the most important ingredient of all—customers. Not a single person had signed up for frosty preservation. EI's brochure had all the right blandishments (it had been prepared by a small advertising firm, another of the Captain's investments). It promised resurrection from death to anyone who'd pay the price of "perpetual care" of his body. Perpetuity, the brochure was quick to point out, had limits. As soon as Science discovered the secret to real longevity—or perhaps even to eternal life—you'll be thawed out, dear customer, made young, and sent off fresh as a daisy into a brave new world.

The company had the usual start-up troubles of a new technological enterprise. EI was still looking for the "first one." Once they had a body in the vaults, once they could augment the sales bro-

chure with a suitable photograph (one that showed the client's serene smile without revealing his identity), others would take courage and commit themselves to lie beside the "first one" awaiting the slow ripening of science.

And so when a careless maintenance man fourth class by name of Sancho Jones Chu fell into an LNG tank and instantly froze to death—it happened in the Caribbean long before they reached the Panama Canal—and when Captain Bartholomew Smith had ascertained that Chu was a man of uncertain origin and indeterminate race, he wired EI at once. Dr. Hatfield, complete with a portable freeze chamber, met them in Panama, took charge of Chu, and flew back to Iowa the next day.

Sancho Jones Chu became an EI first. Over the years he was to acquire many a companion, including Captain Smith, and as time passed they shared many strange adventures.

AND so there is the perspective of Father Time himself, the only person who could track that frozen cargo to eternity.

EI went bankrupt in 2198. It couldn't wait on Science any longer. Tax laws had changed. Energy costs were exorbitantly high. A new religiousness had spread like a bright girdle around earth's shores, and the blandishments of survival by the mediation of Science had little appeal.

The community of dead passed into the possession of a Cardinal of the Old Church Newly Revisited by the Spirit of the Almighty, known

as the Visitors. The tax laws still permitted religious groups to accumulate wealth, and the Cardinal, having tired of old masters (he had the finest collection of pop art in New Columbia) now turned his acquisitive instincts toward curiosities living, dead, and in between, of which EI's necropolis was one of the finest.

The vault passed down through five generations of the Cardinal's family. His great-great-great-grandson had technical inclinations (a rarity in the 24th century which saw the completion of a slow relapse into superstition). Despite the family's substantial wealth, fuel was so difficult to get that the survival (?) of the dead (?) in the one-time EI warehouse was threatened. The young Abbot converted the vault to run off solar energy. He developed a special, mobile housing for the frozen inhabitants—it moved on wheels but could also float like a ship. The cooling system was renewed. The whole marvelous contraption (the Abbot called it the Ark of Time) was energized by a funnel-shaped flowering of panels mounted on the roof. He transported the Ark to South America so that it would never lack solar fuel. Then he abandoned it on a Visitor mission to pursue other gadgets.

And then came the Great Shaking and the centuries of interregnum.

The period acquired many names, including "Dark Ages." Those who so named the interregnum no longer knew that the term was already spoken for. The times were dark, so dark that even Father Time lost track of the Ark. For a

long time it might have stayed on that high Andean plateau where the Visitor Abbot had last seen it. Or it might have been pushed or driven off the mountain, lost in the jungle, or sent out to sea, away from the ravaging radiation that claimed so much of the earth's land surface. At any rate, when the historical darkness lifted—it was the year 800 of the new reckoning and the world burst into flower again—Father Time looked for the Ark but couldn't see it any more. It had vanished from its plateau. And since there was so much else to see, Father Time became distracted and forgot all about the matter. His perspective is no longer useful.

THE early ninth century. Epiphany of the Era of Structures.

They came; in fifty years they'd conquered. They lasted for an eye-wink of eternity, and then they disappeared. But, oh! what grandeur, what vitality while they were dominant. Mankind had been given a new pulse of life. It was as if the Spirit of the Planet, called away for Cosmic Consultation, had returned of a sudden and had reached down with a glowing finger to quicken all earthly existence once again. Structure-man lived a life of glory. He investigated all things, tried all things, dared all things. The arts, philosophy, faith, literature, architecture, science, government awoke in the Ninth to a new and splendid life. The structures were an outward expression of an inner rebirth.

What were these structures?

They were immense vertical cities, cities of millions flung into

PHILIP WYLIE'S

final statement:

THE END OF THE DREAM

Perhaps the most
significant novel

of 1973

from

DAW BOOKS

to order: send 95c plus 25c
handling to UQ1079-G, P.O.
Box 999, Bergenfield, N.J.
07621.

the sky, resting on narrow strips of coastal land, each city a mile high on a square mile of ground, held aloft by a new discovery—gravitron vibration.

They were a magnificent response to the conditions of the time.

Here was a planet with a land surface virtually destroyed by radiation, its oceans filled with piratical, treacherous floating communities, its few plots of "safe earth" in the fierce possession of tribes, its erstwhile cities ashes and rubble.

And then came the structures. They rose up high, shining columns by the sea, so high they swayed in the wind. And culture was reborn within them. They rapidly gained the admiration of floaters, of tribes. The first supplied fish protein, the second helium to cool the

great gravitron drums. There was a crackling tension between Structure and Hinterland, and from that tension was born a new civilization.

So much for the setting.

And now for a new perspective, that of a representative Structure man, a certain Dr. Fist, bright-eyed, vibrant, and insatiably curious, a master of many sciences and not a few arts, a consultant to government, a poet of some note. He had blue eyes, a blond beard, and a bald head. He laughed a lot and moved about in heavy robes of red always in the company of at least five graduate students, at least four of them female.

The doctor had an interest in everything, but his interest in the matter at hand arose from the perusal of some ancient documents, an entire file cabinet filled with records of the Old Church Newly Revisited by the Spirit of the Almighty, papers miraculously preserved by the grace of that almighty spirit, and discovered by a male graduate student on a lead-suited excursion into the radiation belt.

And there, amidst arid sermons, construction estimates, missionary reports, and other odds and ends which only the voracious curiosity of Structure-man could endow with interest, Dr. Fist—who was, needless to say, expert in all the dead languages—came upon a slender folder about the Ark of Time. Appended to some plans, photos, and a press clipping or two, he also found a xerographic copy of a very old encyclopedia article. It described the quaint custom of some ancients of freezing their dead, thinking they could be revived some

day in the far distant future.

The issue captured Dr. Fist's fancy. All issues did, in fact. And Structure-man had energy to deal with all of them in an admirable way. Fist held forth about it to his coterie:

"Imagine, children," he cried, eyes aflame with wondrous zeal. "Somewhere on this planet there might still be frozen bodies a thousand years old. And we might succeed in reviving them. We would, God willing! We would! If only we could lay our hands on the Ark of Time."

The probabilities were entirely against the project. The Great Shaking had made the foundations of the earth to tremble. Eight hundred years of unattended floating or standing would ruin even the plastosteel Ark with its clever flower-topped solar energy pack.

And even if the Ark were found, why would Dr. Fist succeed where all others had failed?

But precisely in this regard did Structure-man deviate from the pedestrian average of mankind—he bet against the probabilities, and he often won.

So it was that Fist acted. He posted a large reward, and he sent out word to the tribes of Hinterland and to the men on the piratical floating ships. He wanted frozen bodies. He wanted the Ark. A picture of it went out from his structure by messenger along the helium pipeline.

He won the first part of his bet. Ten years later a tribesman drove the Ark into Drinaldo Structure and asked for Dr. Fist. He had a faded copy of the notice and of the

drawing. He wanted his reward. The Ark was battered. Its belly bore a fat belt of barnacles, its body was dented, one of its solar panels had been broken. But it was still more or less intact, a whale of a truck or vessel.

Dr. Fist accepted the Ark as if it had been his rightful due. He rubbed his hands, his interest as lively as ever. The graduate students were a different crop but just as eager as the old ones. Fist opened the door of the Ark, saw the traceries of frozen air around the edges of the door, slammed it shut, nodded, and told someone to pay the tribesman.

He ran off to make the preparations in a swish of red robes.

Fist also won the second part of his bet, at least in part. The Ark held forty bodies. Along the way sixteen had been lost in ways that were mercifully hidden in the dark recesses of the Great Famine that had accompanied the Great Shaking.

They set forth in a great laboratory reeking of formaldehyde. They shared space with an anatomy project where Structure-man learned once more how man was made, a knowledge that had been lost.

They began with the old ones and saved the young to the last. They thawed them out—all at once, limb by limb, belly first, brain first. They gave them new blood, they shocked them with current, they massaged, pummelled, steamed, roasted. But nothing happened, and body after body was transferred from the right side of the hall to the left—to serve the cause of science at last. Science learned that

ancient man was just like modern man in all respects that mattered, but dental science had something of a boost—the ancient dentures caused quite a furor.

Structure-man didn't give up. Fist studied live and frozen cells under a microscope. He conducted tests. He electroprobed, irradiated. Gravitron irradiation seemed to help. The cells responded. Structure-man had this advantage: he understood radiation like no other humanity before or since. Gravvibes were a truly new phenomenon.

But then at last, spurred forward by small signs of success, Fist and his students made a key discovery. All of these men and women from the past had died of organic malfunctions. Fist could reconstitute them, in a manner of speaking, but in essence he labored to make fresh corpses from stale ones. The people were dead, and nothing helped, nothing at all, their livers were gone, their hearts had cracked, their brains were diseased. That is to say . . . all but one, all but one!

That one was Sancho Jones Chu. Clipped to his ear was a blue tag that revealed his name and the date of his entombment, October 8, 1998. He was the oldest of the ancients yet in a perverse way he seemed soundest of them all, fresh as a daisy. He'd died very quickly, the doctor decided. His organs were in immaculate state, his heart was strong, his brain solid, his lungs seemingly ready to breathe. His cells, much like those of the others, were ruptured from frost expansion, but for that Fist had found a remedy.

Trembling with expectation, they carried Chu to the irradiation tube. Gently they placed him on metal springs. Gingerly they shoved him in, locked the door. Fist looked about at admiring faces and threw the switch.

Five minutes later, with a tremendous banging and roaring—he nearly destroyed the delicate instruments—Chu came alive.

The rest is a disappointing footnote to history.

WE CAN view it all from a multiple perspective—that of Structure sages who came from all over to question this phenomenon of the past—historians, linguists, musicians, doctors, engineers, military men.

They came, erudite, eager, curious.

They came to see the only man who had—until that time and, so far as we know until ours—made a long trip into the future. They came to see Sancho Jones Chu, Time Traveler.

And they learned nothing, despite their superior linguistic skills and mastery of interrogation.

Chu had almost nothing to contribute. Oh, yes, he sang for them a ditty or two, like “The mermaid’s mother is a sure-fire gong.” He told them about LNG tankers (but Structure-men knew all about cryogenics; their gravitron drums, after all, were cooled by liquid helium). He described the cities he had known, but through his eyes New York, Saigon, Vladivostok, Tokyo, Hamburg all had a certain seamy sameness.

They tried, the sages, they tried valiantly. But Sancho Jones Chu was equal to the challenge. Even Structure-man gave up on him. The flood of delegations shrunk to a dribble, a drop, and then no one came any more.

Chu drifted off, slowly. He janitored for the Institute where Dr. Fist had one of his centers of investigation. But then Chu grew restless. He’d always been a wanderer. A rolling stone, he was, and gathered no moss. He learned enough of the language to get along and didn’t wonder much about the shape of the world because he simply didn’t wonder. He worked his way down through the levels of Drinaldo Structure, from Level 169 to the subterranean foundations where gravitron drums turned in the helium, Chu had a way, like all the rest of us, of finding his own level. He got work as a maintenance man. He did small chores, fixed plumbing. Over time he became something of a figure among his companions by dint of a strange accent and a penchant for clowning. He liked to show his courage and invulnerability—after all he’d lived to be a hundred.

And then one day he clowned about near one of the grav drums. They’d pulled the insulating covers off the pits to find a leak. Sancho Jones Chu tightrope-walked across a beam over the pit. He turned to grin at his frowning, angrily shouting comrades. He lost his balance, fell into the liquid helium, and instantly froze to death.

He was one thousand two hundred and twenty-nine years old.

Such is fate.

Is there anything worse than knowing
of an impending disaster and not telling?
Well, yes, actually . . .



~ JULIE ~

• by Jan Trenholm •

NOW THEY'RE at the crash-site. The latest bulletin says that there may be survivors on the second plane, the one that managed some kind of landing as it

opened—but not many. Several hundred people were on those two jets. The big 747's have been flying nearly a decade without a major accident—but this midair collision

over Dulles makes up for lost opportunity, doesn't it?

I'm glad I quit last week. I don't have to be there. I've seen more death in the last few months than I'll ever take from nightmares. Plane crashes, earthquakes, and that ghastly subway fire in Boston. The radiation accident in Arizona. The building collapse here in midtown. It never got easier. No matter how often I forgot how it was for them at the end, it just never got easier.

When I told Sam I quit, that I couldn't take the deaths anymore, he didn't even look up from the report on his desk. Even though I expected this, it hurt. I found myself making all the old, useless accusations about Julie while he delivered his usual talk about how all we would have without her would be a dingy office and a file of reports on people with high scores on Rhinecard runs. What he really meant was that his picture would be off the cover of *Life*, we wouldn't be in the throes of a not-too-friendly divorce, and I wouldn't be halfway down the yellow brick road to a nervous breakdown. When I left, I heard him dialing Julie, of course. From whom all blessings and etc.

The juvenile authorities dumped her on us eight months ago. They were as glad to get rid of her as we to take over. Glad? God help us, we were sick with happiness.

Sam and I had just about run out of money, faith and time. We had

almost completed a year's sabbatical from Duke that we had taken to find and utilize psychically talented people for the Nation's Good. Our progress had not been spectacular. We had plenty of files on people who thought they could teleport or levitate but couldn't. We had some more on people who could light a match by concentrating long enough, except under direct observation. *Somewhere* out there were the telepaths and levitators and precogs and all the rest. But they hadn't come to us—and we hadn't been able to find them.

Understandable, of course. If I were a high level telepath instead of a low level empath, I'm not sure that *I'd* advertise the fact. Salem wasn't that long ago, folks. Julie Albertson came along when we desperately needed her.

The first time the police noticed her on the scene of a fire, they tagged her as another spectator and likewise the second and third. The fourth, at a really nasty apartment fire, they busted her for arson. Shortly, when the specialists pinpointed the cause as faulty wiring, Julie was released with apologies and considerable embarrassment. Two weeks later, another massive fire broke out at a grade school. Reliable witnesses put Julie on the scene at least twenty minutes before the alarm and the police pulled her in again. And released her again when the verdict of accidental origin came.

The sixth time, a week after that, they called us.

We picked her up at Juvenile Detention and when they brought her out, I could feel the cold, steady hate. Julie Albertson. Her mother who hadn't seen her in a year and "good riddance anyway" had told the authorities that Julie was seventeen, a liar, and a tramp. None of this had led me to expect a grimy but pretty child with long blonde hair. She was long-legged and skinny—am I trying to say coltish?—and wearing wrinkle-tight jeans and sweater that only flatter the very thin and young.

Seeing her, I had a flash of retrospect: how it felt to be that young.

Thirty-two had never seemed older. Then she looked at me and I felt young again.

Those eyes. Blue and closed and hard. Hooker's eyes, holding in everything, giving out nothing.

While Sam went off to sign the papers, I looked up the detective I had worked with during my stint as a human lie detector. After I had helped him nail several by monitoring their emotions during questioning, he had become a believer. He was the one who had suggested Sam and me as the solution to Julie. "She scares me," he said reassuringly, "my brother-in-law was one of the firemen at that grade school fire. Twenty-eight kids had died and he saw that one standing there, smiling the whole time like it was a circus."

I didn't mention this to Sam. The last few days he had been hopeful again, after weeks of growing despair. He suspected Julie was a precog and able to see the fires before they happened. I didn't want to take advantage of his good mood. Our marriage, never exactly stable, had been fraying more than usual under his failure. Maybe if Julie turned out to be what he hoped the pressure would lift for a time and I could make some repairs in our relationship. But I agreed with the cop. Julie scared me.

Sam, though, was all enthusiasm. He sat next to her on the ride home oozing concern and trustworthiness. He asked her about herself and her dreams and anything else that might open her up. Usually Sam's charm works with the ladies. Sometimes too well.

Julie, however, just sat, alternately staring through the window and peeling crimson polish from her ragged fingernails. Sam got nothing from her but mumbles and shrugs.

He waited until we were back home near Du Pont Circle to try his surefire, shake-em-up stunt. Julie was slumped on the couch in the living room. Sam levitated the queen from the chess set on the table and floated it over to her, letting it bob in front of her eyes. It's his only psychic talent.

Julie's eyes bugged. "Did you do that?" she said when the queen came down.

"Sure," he said, "and I think you can do the same sort of thing. In fact, I think you have."

"Me?"

"The fires," he said.

Nothing. She looked defiant but I thought it was fear and wondered why she was afraid now when she hadn't been with the police.

Sam went on, "I know what you did."

The fear doubled and became almost panic. It sent waves through me.

"I think you saw those fires before they happened."

The fear went away. She thumbed the hair behind her ears. "Yeah," she said, "I saw them. I didn't want to tell the fuzz but—" She smiled hesitantly, "I saw them kind of like in a vision. I've always seen stuff like that."

I'd been letting Sam handle it. Why not? But the image of those children in that school bothered me. More coldly than I meant to I said, "If you knew, why didn't you tell someone?"

"Who's going to believe if I tell them a fire's gonna start?" she said.

Sam hurried to her defense. I knew it was a move to gain her confidence but it irritated me. "Julie's right. No one would have believed her, and she probably feels worse about those kids than you do."

He was watching me and didn't see Julie's smile. I could imagine that smile at another time . . .

THE fight we had after Julie had been settled in the guest room wasn't our first, but the first over Julie. "Look Erika," he said when I had finished my reservations, "I'll grant you that she's not your normal seventeen year old kid. But she's a pre-cog!"

"She's a monster who enjoys watching people die. If she had told the authorities a fire was going to start, sure the first time they'd have written her off as a crackpot. But the third time? The sixth? She didn't warn anyone because she wanted those fires, do you understand that?"

I could see Sam was getting angry but he said quietly, "You aren't even trying to understand. All right, maybe—and I won't accept it, but maybe—she *does* enjoy watching death. If you'd been having visions of disasters since you were young, how would you react?"

"Differently."

"No? Then you'd have probably gone mad. My feeling is that her lack of concern is an adjustment, her defense against a phenomenon that must have scared her silly in the beginning."

"All right," I said. It made some sense and I loved him. "You've got a point. I'll give her a chance. But I don't expect a thing from her."

THE CHANGE in Julie over the next few days was close to something, however. The hard-case personality was discarded, along with

the layers of mascara and the trashy clothes. In its place appeared a sweet-faced blonde angel, cheerful and oh-so-eager to learn. Sam kept murmuring about *The Right Environment and Those Who Finally Understood*. I wanted a miracle. But when I looked underneath, I still saw the Julie who smiled at death.

Like most resident astrologers and clairvoyants and such, Sam had been on a local television talk show a few times. When they asked him back later that month, he took Julie with him. Despite my misgivings about her, I had none of her talent. The disasters she predicted—and that seemed to be *all* she could predict—were inevitably front page the next day. On the talk show, outfitted in a demure dress and newly acquired manners, she foresaw a private plane crash with just the right note of dismay in her soft voice while Sam smiled fatuously. The next morning, after her prediction proved correct, the front porch was awash with reporters and curiosity seekers. Within a week she had made three more appearances and three more correct (and terrible) predictions. Requests came. Sam opened new offices. He looked for a staff.

And that was the point of no return. Julie was now responsible for Sam's success and the vindication of his theories. With each tragedy—and once people began to believe, some were averted or lessened by

preparation—her fame and Sam's grew. Julie always made a point of crediting him with the development of her gift.

And he deserved that credit. He worked with her for hours each day to increase her physical range. Soon she was picking up impending large-scale disasters as far as three thousand miles away. But he failed to increase the time limit on her perception. It had never been more than an hour; it averaged half of that . . . and following a prediction, she couldn't pick up a thing for a while. The larger the disaster, the longer the disappearance of her gift.

Power drain, Sam said.

But even with those limitations, she saved lives. Acceptance became adulation. Grateful thousands overwhelmed her with gifts and money began to come in from places that had never answered our letters before. Slowly, other psychics—although none so spectacular as Julie—came crawling out, seeking the fame she had received. They felt safer, perhaps, because the world loved our Julie.

But I didn't. I couldn't. Whenever a predicted disaster came near, I tuned in on her emotions and they were always the same: pleasure and a terrible insatiable thing which I could only interpret as lust. And it became stronger. Often, when a disaster had not been averted, the authorities asked me to reach for the lingering, last

emotions of the dead to help them judge if a pilot had had some warning before a crash or if a murderer had killed with or without premeditation. Sam and Julie stayed near me on these investigations. Inevitably I'd end up concentrating on Julie instead of the victims. I monitored her morbidly.

And became certain.

I SHOULD have told Sam when I first suspected. I waited too long. I had wanted to be wrong about her for Sam's sake so I waited . . . and then he wouldn't listen.

From the first, Julie had haunted our house and relationship. Whenever I managed to pry Sam from his work for a party or an increasingly rare dinner, Julie had a nasty habit of having a prediction. When he invariably hurried off I made a show of being understanding . . . at first. But the night Julie interrupted our first evening together in two months with a prediction of a mine collapse, I exploded.

He put down the phone and told me what she had said.

"That was nice. At least she gave us a start together tonight."

"Not again."

"I can't stand it."

He put on his coat. "Damn it, Erika, she apologized for us before she told me! What else can she do?"

"She always apologizes. You're not an empath, Sam. It's strictly for public consumption. And that

one-hour limit on predictions!"

"What do you mean?"

"I'll tell you what I mean," I said, "she can see as far ahead as she wants. She just doesn't want to. If she prevented all the dying, what would she do for fun?"

"Erika!"

"Don't sound shocked," I said. "Last week when we got there with the police just in time to prevent that murder-suicide, you were ecstatic because we saved two lives. While the police were hauling the man away, Julie was staring at him. You didn't watch, Sam; she looked like someone was making love to her. I don't know if she's a sadist or a neerophiliac or something even worse, but she's sick. And she's delaying her predictions for fun."

The angry denial I expected didn't come. "Listen, Erika," he said, "I know how you feel. Things have been hard on you lately. But Julie isn't responsible for a talent that's more spectacular than yours any more than she can help being younger. Or—"

"Prettier?"

"I didn't say that."

"You would have. I couldn't stand to hear you say it." I looked at him, trying to see my husband through Julie's eyes. Tall, blond, a few gray hairs and wrinkles around the eyes, but quite acceptable. "I've gotten used to your other women, Sam," I said, "but isn't this one a little young?"

"Wait a minute!"

"I wonder if she really feels for you or she's just trying to get at me."

The anger came, then. "I knew you were jealous, but this is crazy," Sam said.

"Crazy? Because you never thought I'd find out. I was so busy concentrating on Julie and worrying about you that I didn't even think about the possibility of this. But are you really dense enough to think I haven't known about the others?"

"What others?"

"Yes," I said, "I guess you are. So I let you get away with your playing around because I love you and wanted you here. But not this time. Not now."

"What are you going to do?"

"Nothing. Nothing at all. It's up to you."

He looked at me for a minute, turned and walked out the door. His choice. It wasn't a choice between Julie and me so much as between me and everything he had wanted to be.

Afterward, I continued working with him though.

WE WERE civil at the office. I wanted some tangible evidence to support my suspicions about Julie. But it didn't come, and just before he and Julie left for a personal appearance swing on the coast, the office gossip and accumulated death made me decide to quit. I had told no one but Sam

of my suspicions. Anything I said would have been written down as jealousy. And until today I really didn't have any evidence. Now, I've seen the monster.

I still have a key to the office. Knowing they'd be at the crash-site, I came in to poke around. In a drawer of Julie's desk, under piles of other things, I found a small diary filled with notations in a round scrawl. In the back was a careful listing of her predictions—including today's crash. She hasn't been in here since Friday, three days ago. So much for her time limit.

Then, I went through the rest of the diary and discovered that I was wrong. That wasn't it at all. No wonder Julie had been frightened when Sam announced he knew what she was doing, back at the beginning.

Julie's not a pre-cog.

She hasn't been gaining range and control but power and imagination. No wonder there's a "drain" after a prediction. Just think how much psychic energy it must have taken to make those two jets collide.

I thought of taking the evidence to Sam. But he had made the choice: he had gone with her.

So I'm taking it to the press. And while I'm at it, I think I'll tell them that Sam has known all along what she's been doing.

And come to think of it, I believe the bastard has. •



IF DIALOG #1

Come with me down to the sub-basement. Down the winding stone passageways. Listen to the drip drip of seeping water. Hear the echoes of our steps. Listen to your loud, frightened breathing.

Here's the door. I slowly unlock the huge padlocks, slide the rusty bolts. The arched, iron-bound wooden door creaks open.

We enter. I lift the lantern high . . .

There he is, hunched in a corner beside a teetering stack of ancient pulp *Amazings*. He is chewing the bones and sinews of an unwary author.

You cry out in a low, strangled voice, "Th-that's your alter-ego, Geis?"

I nod grimly. "Not a pretty sight, but such things rarely are."

Alter lifts his head. He tosses Alan Dean Foster's left narrative bone into a passageway between looming, overloaded shelves. His feral eyes gleam. His hungry gaze

fastens on you as he speaks to me.

"My next victim, Geis?" His voice is Demonic, horrible, intense.

"No, Alter. This is a reader, an observer. He is one of those we serve."

"So this is what they look like. I think we've wasted our time."

"Don't be cynical. Readers are sacred. They're an endangered species. We must protect—"

"I believe in the survival of the fittest. Let them die out if they can't survive in this world. They'll have to get smart or get extinct."

"But where would we be without readers?"

"Writing short captions in big type for picture magazines. 'This is Senator Blah Blah. See him vote for good laws. He is a good man.'"

"Alright, Alter. How would you advise readers to survive?"

"They've got to get better food to read. They've got to stop accepting this junk-reading editors have been feeding them. They've got to write letters, yell and scream for a better diet."

"And of course *you* know all about the proper care and feeding of readers."

"Yes, Geis. Don't be sarcastic. I'm an alter-ego. I'm down here where the nitty grates against the gritty and the Id howls all the time."

"But this gentleman here is a specialized reader. He's a science-fiction reader. He is mostly interested in ideas and sense-of-wonder concepts and—"

"And that's a lot of bull. I read this stuff till my eyes burn, candle after candle, tin plate full of swill after tin plate full of swill, sleep after sleep, year after year, and I've been telling you and telling you, Geis, science fiction is still *fiction*, and fiction is an art-form that operates primarily in emotions. Or, it should. Most science fiction writers act as if emotion is a four-letter word."

"And I keep telling you, Alter, that s-f is a literature of ideas!"

"You dumb orange-sucker! That's why readers, and especially science-fiction readers are dying out—the main ingredient of good fiction writing is largely missing in s-f. Ideas and sense-of-wonder on an intellectual level can be presented in an essay . . . in articles. Fiction is drama—emotional situation—with the reader emotionally involved with the characters, living the story, *in* it. When was the last time a character in an s-f story came alive for you? When was the last time you gave a real damn if he lived or died?—and really cared how the story came out?"

"Well . . ."

"Look at that reader you brought

in here. See how famished he is? What does he get? Cardboard, for God's sake! Half-assed stories with limp, underdone endings. Some stories with no endings at all. How can a reader stay healthy on fare like that?"

"But ideas—"

"Ideas are what determine the shape of the cake, the flavor, the color, the frosting, but emotions are the eggs and flower and shortening."

"Sometimes your analogies, Alter—"

"Shut up, Geis. Readers are hungry for gut-emotions, but it seems like most writers are afraid to deal in them. Or even embarrassed to use them."

"You always have been a blood-thirsty creature. You tend—"

"*Will you shut up?* My point—"

"What do you want, R-rated stories in s-f magazines?"

"You're damn right! I want some stories, not all, but some, which sink hooks so deep into a reader's guts he'll carry scars the rest of his life."

"You ask too much."

"Why? I want, as a reader, to get into a character who really *cares* about something. I want emotion. I don't want to read about a bloodless, passionless, name, a cutout who doesn't have a body."

"Now, you know sex is—"

"Sex is not what I'm getting-at. I want people in the fiction I read to sweat and stink and have gas and occasionally think ugly thoughts and eat too much pie and love to play ping-pong and look longingly . . . or indifferently . . . at a member of the opposite sex and

who have to be reminded to get their hair cut—while they are being realistically heroic or competent or incompetent in coping with future life-and-death problems. That's all."

"Don't whine, Alter. I hate a sniveling alter-ego."

"If that's asking too much, Geis, I'll set fire to these Archives. I'll—"

"*On the other hand*—there's fiction to your taste once in a while in the magazines."

"Name three."

"Well, *Dying Inside* by Bob Silverberg, *Project 40* by Frank Herbert . . ."

"Uh-huh. Go on."

"Well . . . ummm . . . Ray Nelson isn't afraid to write about real human beings. And Richard Lupoff and Phil Farmer on occasion, and *I* have been known—"

"I'm not talking about porno, Geis. Where are my matches?"

"Ellison! Harlan Ellison is becoming known for his recent violent, graphic, sledgehammer fantasies."

"Yeah . . . 'A Boy and His Dog' where the boy and his dog end up eating the girl. And 'Bleeding Stones' where stone creatures come alive on a church as a result of smog and other pollutants and ravage a huge crowd of young religious fanatics. Very acidly ironic and relevant. But that is shock value realism—hit'em hard enough and they'll remember your story forever—and I want everyday honest real realism. You want me to burn these stacks from A to Z or Z toward A? Any favorite author you want torched first?"

"Well, you might singe Stanislaw

Lem a bit—NO! Alter, if you touch flame to a single page of these precious book and magazines I'll throw you down the Hole."

"N-not that!" *cringe* "Why . . . even Ted White wouldn't do *that* to Harry Harrison!"

"Yes—*that*. But you need not fear as long as you behave. Remember, we must keep one thing perfectly clear: I am the resident! You may snarl and growl and eat stray authors now and then, but you and I have a Duty to serve and protect science fiction and fantasy."

"*Fauugh!* Your dedication is not normal, Geis. It reeks of avoidance mechanisms and Games."

"Do not spout psychology at me, Alter. You can be repressed, you know."

"Go ahead. Repress me! I need a nice, quiet vacation. I'd like nothing better than to get back to my used synapse collection. I'm years behind in my cataloging and mounting."

"You'll get more years behind before I'm through with you. Now, finish your stupid complaints about True Realism in s-f and fantasy. I've spent enough time with you."

"I hate you with a hate, Geis, a hate that—"

"Alright, I'll finish for you. You think a real guy or gal can be heroic and can win and solve and struggle to a solid conclusion while still being less than ideal and less than totally virtuous."

"Something like that. Of course that kind of writing requires special skills and special minds, and since 99% of current science fiction and fantasy is written by incompetents—"

"What sacrilege is this?"

"—and for some strange reason, Geis, it is very difficult to create an honest, whole character in a few well chosen words, weave him or her into an s-f story and make it all blend and work together. Good writing in one aspect of a story requires equally good writing in all other areas."

"But—"

"Why would a fine writer waste his time with low-paying science fiction or the very low-paying fantasy field?"

"We have good writers!"

"Good, yes. Some good pretentious writers, some good hack writers, some good earnest message writers, some good specialized writers . . . but only two or three who can put it all together consistently."

"Alter, stop! You're shocking the reader. His eyes are wide. He's twitching and making soft mewling sounds."

"He has to know the truth sometime. We don't get top quality s-f except by accident—a good writer will once in a while rise to a peak and create a first class work . . . or a young quality writer will hit our genre like a comet as he passes through to bigger markets and higher fame."

"*If that's true . . .* Why am I saving all this second-rate writing? Why *not* burn it? Could you possibly be right? Have I wasted our lives? WHY DO YOU DO THIS TO ME?"

"Don't carry on like that, Geis. I hate bad acting. An atomic bomb couldn't shake you. You have dug yourself a niche, here, and it gives

direction and meaning to our lives. So you make the most of it. Admit it."

"You . . . go . . . too . . . far. *I warn thee—*"

"Okay, okay! I withdraw my last few statements. C-close the Hole. I'll just make a final argument or two—"

"Get on with it!"

"Right. I'm sick and tired of shallow realism—slick realism—a kind of pro forma, automatic, hack realism that has emerged in the last few years in s-f and fantasy writing. A few soft-core swear words, a few anatomical references, a few sex scenes devoid of eroticism."

"After all, Alter, the little old ladies in tennis shoes are still Out There, still ready to pounce and scream if an editor publishes anything too porno-ish."

"Geis, you nerd, I don't want porno in s-f and fantasy! I just want real people in science fiction. I want . . . I want Richard Nixon in science fiction!"

Shocked Silence

"And I want whole women in science fiction, and whole children . . . and whole cultures and whole future societies and whole—"

"Come on, reader. He's flipped out again. He does this a couple times a year. The next phase is incoherent ranting and babbling. Then fitful weeping. I hate to see him weep."

I relock the door. I lead the way back up to the ground floor. I smile, turn out the lantern. Now you know my secret. Maybe I'll take you down to visit Alter again one day . . . if you'll promise not to believe a word he says.

UNSOLICITED TESTIMONIAL AND YOU READ IT HERE FIRST

Philip K. Dick wrote a letter to me the other day (May 8, to be pin-pointy) which he wished published. He assumed it would be in *The Alien Critic*, but here it gets a wider audience, and here it pleases me to publish the *whole* thing.

"Dear Dick,

"Just wanted to say that in England the S-F journal *Foundation* seems to be following your lead as a forum where all sorts of meaningful (and meaningless, as well) comments about S-F can appear and be read—throughout the world.

"*Foundation* admits that a certain rare courage is needed to do this. I think you have it, and I'd like to tell you this.

"I hear from people in England who cite *The Alien Critic* as the place where they read such-and-such, so you do get around. In my opinion you are doing an acutely valuable job, and *Foundation* is/will be doing so, too, in their country.

"While I'm writing you I might mention the new novel I'm considering writing; it has to do with the phonograph-record business, which I was involved with, at the retail end, for over seven years. I guess I'll make it a S-F novel, though, setting it in the future. My memory tapes (so to speak) have few if any gaps in them about my years in the record business, what with the rip-offs and payola. The small profits for the retailer, the huge chains

that are wholesalers-retailers who crowd out the little guy.

"Provisionally, I will call the record company DOGSHIT RECORDS INC. (Or DRI, as they now have EMI, RCA, MCA, etc.) In my head I've blocked out the story of an android who has an agent who is another android, but neither knows the other is an invader. (There is a sort of mutual surprise ending, but the main thing is to lay forth the inner workings of an industry or our readership, in a novel of the sort I tend to write and they tend to read.) The musical artist's agent is named (are you ready?) Skim Morewithit, and so forth. There are rip-offs of royalties, two sets of books, all the usual stuff you find today and yesterday in the record business. As to locale, I haven't decided. Maybe on Jupiter, because it will be a (ahem) heavy novel."

MY COMMENTS: *Foundation* is Man, improving s-f journal—caught like a mouse between the cat of its academic readers and supporters, and the popularity-baited trap of needing subscriptions from the fans and average s-f readers who usually take one look at professional writing and run away.

Peter Nicholls is now *Foundation*'s editor, a well-read, sharp-thinking man who is trying to thread a line between too much stuffy analytical writing and too much "popularized" writing and features.

Foundation at the moment is too straight-laced and dignified for my taste, but I'm so low-brow most

people can't find my forehead.

Subscriptions to *Foundation* are \$6. per four issues, surface mail, or \$10. airmail. From: The Administrator, The Science Fiction Foundation, North East London Polytechnic, Longbridge Road, Dagenham, Essex, RM8, 2AS, England.

Phil's projected novel (which I hope he will write but which I fear is a joke) prompts speculation as to possible titles. I might suggest *Universal Disc Flogger*, or *\$5.95 RPM*, or *Spin Me, Said the Poo-Poo Man*. (A little ubiquitous self-censorship, there.)

"FROM the beginning of history," said Orlo, "the world seems to have been dominated by about five percent of its males. An additional fifteen percent could join that group, but they can't quite make it. Of the remaining 80%, seven or eight are sex variants; and the remaining 70+ percent constitute that large body of hardworking, normal people who get married and raise families and don't get divorced except for good reason. This seventy percent, it has turned out, essentially accept a government's visible public image."

—*Future Glitter* by A. E. van Vogt.

THE W1(ZARD) OF (OZ) = ZARDOZ
REVIEW DEPT.

I guess I'm just unlucky. An old friend came over last night, and to avoid playing chess with him and listening to his endless troubles (which I was buried under, in the

end, anyway) I suggested we take in *Zardoz*, an apparently high-powered s-f movie playing down at the Jantzen Beach Tri-Cinema.

So we tooled down to the renovated flood plain which is now covered with concrete and mobile homes, motels, a multi-zillion dollar shopping center (all waiting for a massive snow-melt one of these years to create instant disaster as the Columbia River does its thing) (will a 20 x 60 mobile home float?) in his old Belchsmog Eight and paid our \$2.50.

(One of the reasons I'm writing this review: I can charge that \$2.50 as a business expense. The Fates owe me that much.)

Zardoz was written, directed and produced (he has no excuses) by John Boorman. It is a sour, smelly, ugly, repellent, pretentious mess. I mostly enjoyed its fast-moving display of s-f furniture from our warehouse. The trouble is, Boorman managed to get dirt all over our things.

The story lurches and staggers through much gratuitous murder, rape, assault, and much sanitized semi-nudity (all the women are small-breasted), simulated intercourse, smirky-funny scenes dealing with male erections, and magic-science.

Briefly, the story is about a small group of immortal Eternals who live, 300 years from now, in force-field protected enclaves. They are the self-appointed "civilized" remnants of mankind who have kept science, literature and art preserved after a worldwide Blowup.

The Eternals use a *huge* flying stone head called *Zardoz* to control

a group of Outside killer tribes who obey the massive head as a god. These killers have been motivated to kill off the ragged survivors of the old cities and towns.

A killer tribe mutant (Sean Connery) stows away in Zardoz during one of its periodic visits to spew out guns and ammo and take on a cargo of grain. Zed (Connery) and his fellow mutants resent the recent Zardoz commands to change from killing the ragged remnants to enslaving them for grain-growing purposes. The enclaves, called vortexes, cannot grow all their own food.

Zed kills the Eternal who operates Zardoz, leaves the stone god when it lands in a vortex (it is computer operated by remote control), is "captured" by the easy-going yet ruthless Eternals, is experimented upon, examined ('What an interesting beast'), and in turn has his revolutionary anarchistic effect upon them and their fragile society.

There is a self-conscious hidden computer used by all the vortexes called The Tabernacle. It dispenses wish-science via "magic" rings.

There is a yen/lust among the Eternals for death. (For every sin and rule violation they are tried and punished by a certain amount of aging, but never, never allowed to die.)

I could go on and on describing the intriguing plot elements such as the Eternals lack of sex drive because of ennui and over-intellectualization, their ability (through the computer and developed psi-powers) to recreate themselves if accidentally killed or damaged, their view of all types of human

Outsiders as mere halfway intelligent animals . . .

In the end Zed discovers the hidden computer, "kills" it and lets in his killer friends. In an orgy of shooting and stabbing, the killer tribesmen wipe out all but a handful of the Eternals.

The Eternals got what they subconsciously and philosophically wanted, you see, since they created the mutants as seeds of their own destruction. The vortexes, Zardoz and The Tabernacle were Evil and really not suited for mankind.

Zed and his favorite Eternal woman escape the carnage and (in *2001—A Space Odyssey* type stop-motion, time-passing sequences) raise a child, wither and die. Very symbolic and arty.

Zardoz is clumsy, obviously derivative, dumb, exploitive, pandering, and inept. It is probably a prime candidate for Worst Movie of the Year dishonors.

If you see it you'll be ashamed of yourself as you walk out of the theater.

THE immature man laughs at the foolishness of others.

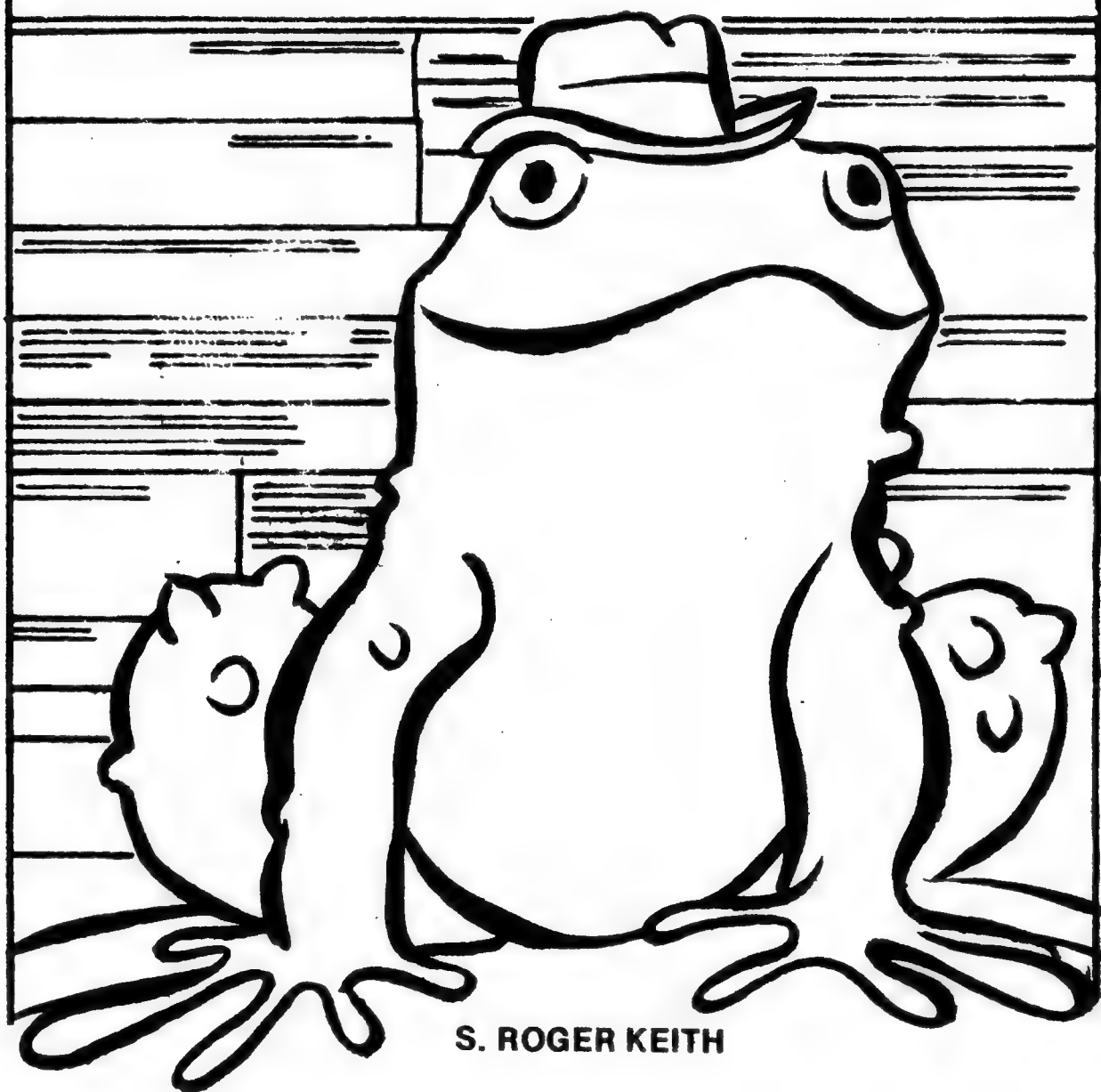
The mature man laughs at himself.

The wise man smiles at the world.

The superior man employs the immature, the mature and the wise.

IF I KNEW how to end this column, I'd do it.

DEATH AND TAXES



S. ROGER KEITH

**ARTHUR LYBRAND, C.P.A.,
EDITOR**

THERE are several cases this month resulting from the Hart Amendment to the McClellan Act. This amendment allows U.S. Citizenship to alien life forms previously granted temporary residency under the provisions of the McClellan Act. Several questions have been raised concerning the status of these new United States Citizens.

Hegar v. the Commissioner, (2nd Cir. November 1, 2196)

25 AFTR 2d 70-392 Aff'd 52 T.C. 76.

The intelligent inhabitants of the Second Planet of the Albedonian System, Albedonian II, are in fact sets of specialized unicellular organisms. These organisms cooperatively join together to form colonies which look remarkably like gigantic earthworms. During the late civil war on Albedonian II, their Ambassador to the United States, a colony of approximately 10,000,000 cells called Hegar, asked for and received political asylum. This colony then entered the accounting profession, where the fantastic attention to detail provided by 10,000,000 organisms (even though unicellular) focused on one task made the colony spectacularly successful. Accordingly, in the calendar year 2173, Hegar's first year of being a citizen, the colony grossed \$4,987,522.

The colony argued that each of

the 10,000,000 cells could file an individual income tax return. It was argued that a partnership had been set up to act as a conduit for the resulting income of the colony, each cell having a proportionately equal share. Therefore, even though the colony had earnings of about \$5,000,000 of gross income, the proportionate share of each cell was under 50¢ which was under the \$5,000 annual gross income tax exemption. (It was, indeed, fortunate for the taxpayers' claim that the amount attributable to each cell was under \$5,000 or some 10,000,000 tax returns would have been required.)

The Commissioner of the Internal Revenue Service called in several extraterrestrial biologists who determined that the specialized cells could not survive as individuals for longer than twelve hours.

Taxpayers' Counsel, on the other hand, showed that the individual cells were able to select a particular colony and moreover could switch from one colony to another. It was also pointed out that since the cells reproduced by fission the members of the colony had no access to a joint return.

The Commissioner counter-claimed that if the colony's tax status were to be calculated on such an extremely micro basis, consideration should be taken of the individual cells which had died and the new cells which had replaced

them. In effect, the members of the colony were guilty of not filing approximately 5,000,000 estate tax returns (the half-life of a cell is approximately one year). Hegar argued that the amount attributable to the average estate was less than the required minimum of \$10,000 for filing an estate tax return.

Finally, the Commissioner contended that the primary motivation for the partnership was tax evasion. The taxpayers' counsel showed that close cooperation among all cells was necessary for the performance of the colony duties as an accountant; hence, the necessity for the partnership.

The question of motivation is somewhat elliptical. As the Court said, "The crucial question is not whether the reason advanced by the taxpayers is so weighty as to have required the formation of a partnership; rather, the question is whether this was the real reason that caused the cells to form the partnership." The Court believed the colony, despite the presence of certain counter indications. Thus, the colony did not have to file any income or estate taxes for the year 2196.

The Internal Revenue Service will undoubtedly appeal this decision.

AGIANT *Vegan Toad v. the Commissioner*. (U. S. Supreme Court, October 20, 2196)

25 AFTR 2d 70-995.

Here, the Supreme Court reiterated the principle that death must be conclusively proved before estate taxes are due. The facts of this case are as follows.

The giant toads of Vega are known for their symbiotic relationships with their masters. They attach themselves onto an intelligent life form and, dog-like, follow that individual around until its death. Since the toad's life span is approximately 5,000 Vegan years (approximately 1-1/3 as long as a Terrestrial year), it generally outlives its master. While possessed of a master the toad is extremely passive, but upon the demise of this individual a strange transformation takes place: the toad takes on the personality of its master and becomes privy to all of the memories of its master. Accordingly, for all intents and purposes, the personality of the master lives on in the Vegan Toad.

Such a symbiotic relationship is viable between Earthmen and Vegan Toads. Accordingly, Vegan Toads were much in demand in the United States as pets. Several commentators have argued that it is not clear that the Earthman has really survived the transformation. Also, it may not be pleasant spending approximately 4,910 Vegan years in the body of a toad. However, the transplanted personalities interviewed by the Press expressed admiration for the new perspectives gained by the transmigration. One

modified toad commented, "It's not so bad, especially when you consider the alternative."

Amus Tuck, a wealthy uranium miner, was one of the first Americans to have a Vegan Toad. He died March 19, 2196. The terms of his will left all of his worldly possessions in trust to his faithful Vegan Toad. The decedant's attorney contended that no estate taxes were due since Amus had not died, but continued reincarnated as the Vegan Toad.

The Commissioner contended that: 1) there was no conclusive evidence that the toad was, in fact, the reincarnated Amus Tuck and that 2) even if the above were true, Tuck was medically and legally dead and, accordingly, death taxes were due. Finally, the Commissioner pointed out that if the defendant believed in the efficacy of reincarnation, no will would have been necessary.

An *amicus curiae* brief was filed by Brenda Tuck and Steven Tuck Gross, Tuck's grandchildren and only living heirs, contending that:

- 1) the Vegan Toad was not Tuck;
- 2) the will was invalid due to insanity.

The contention of the brief was that Tuck had indeed died intestate and, accordingly, the grandchildren were entitled to the remainder of the estate after payment of estate taxes.

The Supreme Court slashed through this Gordian knot after a

lengthy interview with the Vegan Toad plus the sworn testimony of 20 of Tuck's closest friends who claimed that the Vegan Toad was indeed Tuck. The Court ruled that Tuck continued to exist as the Vegan Toad.

THE *537 Wives of Stud v. the Commissioner*, (2nd Cir. November 28, 2196)

25 AFTR 2d 70-1291 Rev'd 52 T. C. 439.

The final case this month involves complications resulting from extraterrestrial marital customs. This case also indicates that biological differences are not necessary to test the boundaries of the U.S. Tax Code; sociological differences are quite sufficient.

Lucius Stud, a humanoid native of Egret, the largest country in the fifth planet of Balmour, immigrated to the United States on February 15, 2195. He brought with him all 534 of his wives. Under Egret custom, Stud could marry up to 1001 wives. This custom was due to the ratio of males to females on Egret.

Having duly received permission from the Grand Snark of Egret, he proceeded to marry three U.S. Citizens by December 31, 2196. Pursuant to the Hart Amendment, he claimed U.S. citizenship for all 534 of his other wives as well as for himself. For the year then ended, Stud directed each of his wives to fill out a joint return. This is not

unusual as wives were the principle breadwinners on Egret, men spending their time on weighty philosophical discussions.

Stud's wives contended that each of the 537 marriages was legally binding due to the Bently treaty between the United States and Egret allowing reciprocal legality for the customs of each country. The Commissioner argued that if 537 joint returns were filed, Stud would be allowed to be a deduction on each return, thus violating the general rule that one can not be a deduction on more than one return. Moreover, if taxpayers in general were allowed multiple marriages, the administration of joint returns would become an administrative nightmare.

This argument was unsuccessful. The Court accused the Commissioner of using colorful hyperbole and ruled that all of Stud's wives were entitled to the joint return, but only one of them could deduct for Stud.

DUE TO the poor showing of the Commissioner in this month's cases, it appears that legislative clarifications will be necessary to close the gigantic loopholes in the fabric of the U.S. tax legislation due to the Hart Amendment.

Next month we will explore tax planning techniques for partnerships between Homosapien and naturalized extraterrestrial U.S. Citizens.

THE ALIEN CRITIC



An Informal & Irreverent Science Fiction & Fantasy Journal

**Edited & Published by
Richard E. Geis**

Read issue #10 and boo and hiss Stanislaw Lem as he puts down American S-F writers, readers and fans in an interview. (The man is a Polish intellectual snob.)

Look forward to an interview with Avram Davidson in issue #11, and a critical destruction of Isaac Asimov's Foundation trilogy, and God knows what else I can squeeze in.

In 1975 there are interviews with Philip Jose Farmer and Keith Laumer scheduled.

Every issue: The Archives & a Dialog.

Enjoy Geis editorials, commentary, reviews, letters from high-powered (& low-powered) pros and fans.

Quarterly/sample \$1
year \$4/two yrs. \$7

THE ALIEN CRITIC
P. O. Box 11408
Portland, OR 98211

*Even the Technarch of the Seven Worlds
should not lightly disturb the meditations
of a Philosopher of the Hintas School!*

EGANTEI AND THE SAGE

JOHN C. WHITE

THE TECHNARCH of the Seven Worlds, Yang Egantei Mei Chant Ajal Dunia, was at peace with himself. The Hintas would have no choice but to accede to this somewhat forceful request that they assign a full philosopher to him until the threat of Togger A137 was past. Things had proceeded so well that he was free to pass the remainder of his work day relaxing amid the treasures of art which he had collected using the wealth of all the Seven Worlds. The philosopher would arrive soon and there was hope that Togger would come no closer to completing his boast than talk. The treasure would be safe

and Egantei could be assured of the tranquility of his Gallery as an eternal refuge from the tension of governing.

The bells suspended on the curled toes of Egantei's slippers woven of Amethyst and Beryl jingled in the sudden halt of his body confronted by his Major Domo. The soft removed voice of Egantei met Dolch politely, the servant was a wonder, not once in the years of his service had the Technarch found a trace of hair on the man or the faintest body odor.

"Yes, Dolch."

The major domo approached to within three feet and turned his

head ninety degrees from the Technarch that his breath be cast away from his employer.

"The philosopher has arrived Revered One."

Egantei nodded acknowledgment. "Ah, you see Dolch. Even the Hintas must hear the wish of the Technarch of Seven Worlds."

Dolch bowed, the barest tension flickered in the expanse of his forehead leading on into the whiteness of his shaven head. "Though it seems true, Revered One, there are few willing to threaten the Hintas."

"I shall be most careful Dolch. Where have you sent this philosopher? There is little need to affront him further by tardiness."

Dolch's voice caught in his throat. "Ruh, R . . . Revered One, I have served long and am not unskilled in dealing with guests something less than delicate, but this one is, is—"

"Come to the point Dolch. The guest is intractable but where have you deposited him?"

Dolch fairly croaked. "The Gallery."

The face of the Technarch whitened with anger. He breathed deeply, forcing the emotion from him. It was neither seemly nor healthy to succumb to such a crude useless thing as anger. Ultimately the Technarch regained the peace which was his natural state. His hands ceased trembling. Dolch had disappeared quite diplomatically and Egantei walked swiftly toward the Gallery.

When he had reached the moon circle which was the entrance Egantei slowed once again, allowed his eyes to caress the silver lustre of

the circle. It would have pleased him to forget the philosopher and devote the proper time to fully appreciating the intricate beauty of the moon circle. Though glowing as if smoothly polished the entire frame was etched in the trails left by the metal worms of Ddavo. Thru some mystery the worms moved in patterns preset by their nucleic structure. Placed by an artist, such a thing as the moon circle could be produced. Egantei passed thru the circle into the Gallery having nearly forgotten that this time he came not to fete his senses but on business.

Inside the Gallery he beheld a spindly runt of a beggar dressed in ragged clothing bent over one of the niches in the far wall. Egantei moved with grace beneath the folds of his gown across the space between. The perfection of the ceramic glazed floor, composed of 333,333,333 individual tiles meshed into the legend of Lian Mabat and his mischievous brother Lian Tua held the Technarch's eyes until he had nearly reached the shabby figure.

The beggar turned to face Egantei and at the moment that comprehension settled on the Technarch his bells-jangled; his rings tarnished; and the music of the cosmic symphony missed not one note but two. In the knobby unwashed hands was the single Ariadan Soul Piece ever worked to completion. And worse, the hands were shaking, the treasure seemed about to fall.

"P-please, honored guest, b-be careful, the p-piece is priceless."

The dirt grimed face bent to look in disbelief at the metal spire in his

visibly quivering hands. Slowly, jerkily the piece was returned to rest solidly. The Technarch began to breathe, color returned to his face and when he stepped toward the Hintas philosopher there was a smile on his face. A smile on his face and spite in his heart. The Technarch ruled his life to the love of beauty. Something in the philosopher grated against this devotion but Egantei had an end to attain.

"Honored Sage, forgive my greeting but the Gallery is my retreat from the trouble of ruling the Seven Worlds. I am Yang Egantei Mei Chant Ajal Dunia, the proper appellation is Egantei." The Technarch smoothed the red stone set in one of his many rings. The shabby runt brushed his smudged palm down the front of an already soiled tunic.

"I am called Dry Wine."

"It is an honor to meet with such a revered instructor of the Hintas thought. Of respect for the value of your time Revered Sage I shall attempt to explain quite briefly my reason for appealing to the School." Dry Wine twisted his head peering beneath his armpit at a porcelain vase perched on a pedestal behind him. Egantei continued. "It has been my misfortune that lately a certain Togger A137 has made the public boast that he will steal every treasure within this room. In his words, from beneath my polished nose. Through my investigations I have learned that this boast could be far from idle. None of the leading protection agencies is willing to undertake the commission of guarding the room.

It seems that this Togger is considered the most skilled thief who has ever lived."

Apparently oblivious to Egantei, Dry Wine crawled on hands and knees over the tile floor. His short tunic was drawn up over the shiveled curve of his buttocks presented square to the Technarch.

"I have of course exhausted every possible avenue in order to assure the safety of the collection. The Hintas are my last resort. I hope that my somewhat forceful attitude in this matter is understandable."

Dry Wine lifted his soiled tunic and in a physical contortion patently impossible disappeared between his own legs. He emerged a second later crushing vehemently some real or imagined parasite between his thumb and forefinger. With a last careful examination of his fingertip he turned to the Technarch.

"Technarch Egantei, the methods of the Hintas may perhaps seem less than rational to those uninitiated in the inner mystery." The runt's manner was openly insolent, but the Technarch would allow nothing to interfere with his desire to protect his treasure. The philosopher's voice squeaked on. "It would be much worse than if you had not appealed to the School should you choose to interrupt the forces which will be set in motion."

The Technarch bowed graciously. "I am vaguely familiar with certain rather . . . odd matters concerning the Hintas. Though its techniques are somewhat unusual the School is noted for its unmarred record in successfully completing any task which it undertakes. Be

assured that both I and the wealth of the Seven Worlds are at your service." Another and even more gracious bow and the Technarch continued. "Perhaps you would wish my engineer to show you the means by which I have endeavored to protect this room and its contents."

The philosopher scratched his inner thigh. "It is not necessary. There will, however, be some minor expense incurred."

Egantei pulled an engraved signet from his index finger and laid it on a marble table. Quite noticeably he stepped away from the table as Dry Wine approached to take the ring. He seemed almost not to notice the philosopher as he spoke. "The ring will serve as currency anywhere in the Galaxy. The wealth of the seven worlds is well appreciated."

Dry Wine scrabbled forward, still scratching his thigh. He ignored the warning of the wealth of the Technarch. "I shall send instructions within five days." Pushing the ring onto his thumb he walked with dignity through the moon circle.

EGANTEI stood for a few moments. His hands quivered and tiny spasms clenched at the corners of his mouth.

"Dolch!!!"

The shaven aide was immediately in the Gallery. He was unmoved by the turmoil of the Technarch, stood silently while his master fumed.

"Follow him Dolch. He's not to leave your sight. I don't trust the Hintas, and as you say, perhaps I

was less than submissive in requesting their help."

Dolch turned to leave. The spasms of anger and fear did not lessen in Egantei. Even in his retreat, surrounded by the beauty of a Universe, the fear of losing that which gave him peace left him no longer safe from the agonies of the world. His words erupted in torture, cut Dolch off before he had left the room.

"Dolch, prepare a walker. I shall go myself. See that it is bathed and dressed well. Attend to me yourself, I'll have no engineers about my body."

"Yes, revered one."

Still the turbulence was on Egantei. Mixed within the fear of losing his treasure was now the anticipation of walking in the ugliness of the world outside. His clothing had grown damp with sweat and as he walked to the transfer chamber it was an act of will not to turn aside to bathe and dress. Egantei thumbed the door panel and was inside.

The walker was ready, slumped senseless in the left hand chair. Egantei had used the walkers before but had never had the courage to leave his citadel. He studied the smooth skin, detected not the faintest odor. He fancied a slight perfume rose from the artificial body. Dolch led him to the right hand chair and began fixing the bands about his skull. In moments it was done. Sweat ran in streams beneath the robe of the Technarch but in spite of centuries of seclusion there had never been such a threat to his own personal dominion as that posed by Togger A137. Silently he

cursed them; first the master thief and then the philosopher. The warmth of the curse calmed him enough to speak.

"Now Dolch."

Dolch's naked hands worked the console and Egantei sensed only a momentary fuzziness. When his vision cleared he was inside the walker. Quickly he checked the circuitry; vision, locomotion. All the senses were in order. Egantei stood. He was captured in the slack lifelessness of his own body slumped in the right hand chair. From the look of it he was due for a session with the Med Team. In the twenty years since his last session the body had begun to go to fat. He thought too that perhaps the kidneys were giving out. Without a word to Dolch, Egantei left the transfer chamber. Enough concentration was needed to control the walker that the Technarch was partially relieved of his fear but it came to him again as he reached the side exit through which the philosopher had departed.

Green light washed into the cells of the walker. Odors of dust and human motion loaded the circuits which channeled them to his brain. Egantei forced the waves away from him, pierced through the cloud of them. Just outside the gate he could see the scrawny philosopher squatting to speak with a child whose mother studied the schedule of a tube, waiting for the computer to clear her route. Egantei gathered in his mind the tune of the singing sands and the symmetry of the soul piece as guards against the world about him. In front of the gate the mother gathered her child's hand

and they were gone inside the tube. The philosopher turned and with Egantei in the act of opening the gate they were face to face. With the poised deception of a ruler Egantei ignored the philosopher but as he was passing the thin voice of Dry Wine accosted him.

"Do you work for the one who styles himself the ruler of seven worlds?"

This Egantei could not ignore. Barely mastering indignation he questioned as would a loyal employee.

"You speak of the Revered One, Yang Egantei Mei Chant Ajal Dunia?"

"That's him, old tepid tea and pink lace, says he rules seven worlds but shuts himself away inside a citadel of beauty and order."

In the chair Egantei's body flushed. On the street he said.

"Who are you sir?"

Dry Wine smiled. "You sir are nearly as stupid as old pinky. As long as you intend to follow me why don't we go together. Save both of us a lot of trouble."

The philosopher was right. Of course it was obvious that the walker was to follow the sage. The strangeness of controlling the walker and the weight of the world about him had dulled Egantei's mind.

"Very well. I hope you understand my employer's concern."

Dry Wine punched his own priority on the tube and its door slid open. As they entered he spoke.

"Better perhaps than the Technarch himself."

The pressure in the tube pinned them to the wall of their cylinder for the space of a moment and the door opened. The green light flooded them once again. They were in the deep, that part of the city in which only a fool walked, even in daylight. Dry Wine scabbled off in his peculiar stride apparently uncaring as to whether Egantei followed or not.

Sweat poured from the body in the chair. It was by force of will that Egantei kept himself inside the walker. The people in the deep smelled. It had been an oversight to take a walker whose olfactory sensors were connected. Egantei moved in a gray tunnel, seeing only the beggar sage who led him. Hastily he caught up with Dry Wine. His voice was faint.

"Where are we going?"

"To protect your lord's treasure. The Hintas are always true to their word. Here, this is the place. If we are lucky we will find your thief in here."

Egantei allowed himself to take in for a second the smoke-clouded windows, cracked paint and sour odor. The door closed behind them and they were inside the room. The sweet decay of chandu was in the air. Users lay on the floor where they fell. Their bodies twitched occasionally, nervous systems nearly burned out, they had neither the money nor the desire for the med session which might renew them. A thick man with gray dirty skin stood behind a counter. A bowl of antiseptic with a yellow cloth swab floating in it was the only decoration of the counter. Three pneumatic injectors hung on the wall

above it. Two tubes led from each, one to the air compressor and another to some sense-destroying drug. That such a place, flagrantly illegal could exist in his capitol city enraged Egantei. Whether the philosopher guessed his thought or through some gift could read it even in the face of the walker Egantei did not know.

"It would be unwise of your employer to take action against Mar here. Many choose to leave the world. These narcotics shouldn't bother old pinky; they are neither as expensive nor as subtle as the spell of the Ariadan soul piece but of similar function."

The remarks fluttered feebly at the thickening wall which Egantei drew about him. The philosopher pointed to a table in the shadows. As they neared it, the odor of defecation rolled out from an open door frame. Gorge rose in the body which was safe in the chair. Egantei nearly succeeded in masking the odor with the fragrance of orchids which he held inside him. The man at the table was old. His body was well cared for. Egantei guessed him to be at least two hundred, but younger than himself. They sat in plastic chairs, chairs covered with the oily stain of chandu smoke. The man viewed them with empty eyes. His face was as passionless as his voice.

"Good day philosopher. Though it is good to see you old friend I must guess that you are the agent by which our foppish ruler attempts to save his treasure."

Dry Wine inclined his head. "I would not hide this from you Gog. The commission has been forced on

us and I am the one who must execute it."

Blood rushed through the body in the chair. Egantei forced seeing so that he would know the face of the thief. In the clarity of vision Togger A137 was revealed as a creature of subtlety. Sudden fear took Egantei, fear that he had put himself and his hope into hands which would betray him. His thoughts, his fears clung to him. He fought against them and the revulsion arising from the odors wafting through the door to hear the conversation.

Togger smiled, a thinness against his face.

"Well, philosopher, it will be even more of a challenge than I had hoped for." As though he had just noticed Egantei, Togger studied the voided face of the walker. Satisfied, he returned his attention to Dry Wine. "If you would excuse me for a second my friend I have a small business to attend to."

The thief rose, became part of the grayness which held the world away from Egantei. The Technarch was immersed in his fears of betrayal. Of all the things which were certain in the world the most certain was a contract taken by the Hintas. The School did not deal in deception. But Egantei was plagued by the fact that this was not a contract undertaken voluntarily; he had forced it on the School. Even the Hintas might betray him under such circumstances. Worse, the philosopher was a friend of the thief.

AS EGANTEI thought he became aware of an uncomfortable

wetness spreading down his side. The flow of it ran beneath his clothing. An acrid smell rose to his nostrils as the Technarch turned the walker's head.

Togger had lowered his trousers and as the head came about the thief switched his elevation and urinated square in the blank face. Egantei did not hear what he said, his mind was bolted back into the body of his birth.

Purple apoplexy bloated his face, thick veins throbbed through his neck. The muscles of his body twisted in spasms confined by the leather straps which Dolch had fastened. The odor and warmth coalesced in horror and outrage. Murder was in the heart and soul of Egantei. He did not even feel the needle which Dolch slid beneath his skin. The Technarch fought the drug as some material foe. His anger, the core of half-formed revenge fermented within him as lethargy took even his mind. The Technarch's last slow thought was of pride. It had been wise of him to take a walker; the thought had crossed his mind to go himself. If he had it would be his flesh and not that of the walker which was fouled beyond cleansing.

Egantei opened his eyes. The comfort of his bed chamber was like a womb around him, soothing the nerves which had been strained to exhaustion. For a moment he was a babe, seeing only the wonder of light. A thought still red with the passion of hate fought to reach the surface of his mind. Egantei reached for it. Rage, cold and deep quivered through him. The sleep, however, had refreshed him. His

voice was measured and toneless as he called for his servant.

"Dolch."

Hairless, silent, Dolch appeared.

"Yes, Revered One!"

Egantei raised his head, calmed himself by straying into the delicate etchings of a lythian cardograph covering the far wall of his bed-chamber. The symmetry of it was cool water, the color soothing grace. The fact of it was a reminder that even his revenge must be tempered with caution lest he lose his treasure, his life.

"Has there been word from the philosopher?"

"No word Revered One, but a report from one whom I sent to follow."

Egantei sighed. If he could not trust himself, Dolch was infallible.

"What was the report?"

Guessing that the Technarch would rather hear than read the paper Dolch slipped it from his sleeve and began to read aloud.

"First sight of the Hintas philosopher was in the deep where he was walking in the company of the master thief Togger A137. Shortly the philosopher shook hands with his companion and they parted on apparently good terms. The next action of consequence was the entry of a Com Station where the subject sent two messages."

Dolch bowed, "Copies of the two messages were included. The first carries neither a name nor an address.

To: Tepid Tea and Pink Lace

From: Dry Wine

Respected sir; I hope that you do not hold me responsible for the actions of another. I could not

know that Tog held walkers in such loathing. These things aside the safety of your treasure is now within your own personal control. If you wish to complete the contract have the feast of 127 dishes prepared by the hand of Alonjian Sidap lain on a plain blue cloth of coarse weave. The feast must be laid on the cloth within the Gallery. Provide three couches molded of silver and upholstered in the same cloth as that upon which the feast is laid. The other embellishments I leave to your own artistic discernment. Your presence is mandatory. Should you leave or behave in a manner which is offensive to our guest your treasure could be lost. The feast is to be set on the third day after you have received this message. The time is to be exactly one hour from 1800 hours to 1900 hours. Should you leave before the hour is done or attempt in any way to discover the identity of our guest you have voided the contract."

Dolch paused to show the message done. "I had assumed the message was for you Revered One, but it seemed unlikely addressed in such a way. The second message, though it has an address is even more cryptic."

To: My most perfect friend

From: Your humble philosopher

The favor I ask I have asked before. The gain we make is more than real. In the light of a marsh fire, oily and slick, I pull a bouquet of rotten carrots. We meet in your palace at 1600 hours three days from the day you receive this."

"And that is the message Revered One."

Egantei took the paper, read it

only once again; silently; and returned it to Dolch. His decision was made. Revenge would wait until it was expedient.

"When did you receive this Dolch?"

"It is 1200 of the third day Revered One. Should you choose to go through with it the arrangements have been made."

Egantei felt the release of defeat course through him. Let what would be; be.

"I am in retirement Dolch. I will see no one but yourself. Make the preparations and any others which will insure the safety of the Gallery. Do not interfere with the Hintas."

Dolch padded silently from the bedchamber and the Technarch was left alone to gather what peace he could before the confrontation. Egantei dressed himself and as the clean cloth settled next to his body peace left him. A drawing sort of spell called to him from the Gallery. With the spell was the apprehension that he might never behold his treasure again. His footsteps were hurried and when at last he reached the gallery a thin film of perspiration dampened his forehead. He paused before the moon circle drinking its beauty with a desperate need. The passion did not leave him, was not drawn from his soul by the delicate etchings. He moved inside the Gallery, ignoring the flurries of Alonjian Sidap as the Chef prepared the feast.

The sweat dried on his forehead, blood slowed in his veins, his hands grew warm where they had been cold with tension. Egantei became lost in the slow river of beauty which caught him. Togger A137,

even the philosopher melted into the line and art of his treasure. With only half an hour remaining Egantei had recaptured his tranquility. He began to adjust the serving dishes laid for the feast. The bird piping of Alonjian cascaded in trills of horror.

"No, it is not so. The feast, it is not to be profaned, the kero-pok . . ." The chef waved a bowl of crisp red flakes at the Technarch in flurries of exasperation. "The kero-pok must be . . ." With a flourish Alonjian resettled the dish. "HERE!!" Arms crossed, the bird-like Alonjian challenged Egantei but the Technarch was gentle. He understood the temperament of such an *artiste* as Alonjian Sidap.

"My apologies She' Sidap, one is unnerved by the delicate nuances which fill the air. One is overwhelmed by anticipation. If it would not be an overly stated addition, I offer the use of any of the pieces within the Gallery . . ." And for thirty minutes the Technarch and the cook discussed the value of each of the treasures as the one most likely to echo the flavor of the feast of one hundred and twenty-seven dishes. When at last it came to be 1800 hours they were fairly in raptures of esthetic joy. A chime chimed and Egantei excused himself to finish the odious business of an entire meal with the philosopher Dry Wine. Alonjian exited quietly and the Technarch tinkled his way to the moon circle.

THE PHILOSOPHER did not wait to be greeted by the Technarch but strolled casually into the Gallery. Egantei ducked his head

in a small bow preparatory to speech but when he raised his head the words were choked on the gorge which rose in his throat. Egantei turned away from his guests. The philosopher seemed not to notice but began speaking as though surrounded by friends of long acquaintance.

"Ah Revered Technarch, I am glad that in only one hour my commission will have been successfully completed. Allow me to introduce my companion." Dry Wine's every move was an overly exaggerated etiquette that went unappreciated, for Egantei remained with his back turned. The Technarch hardly heard the philosopher as he struggled with his stomach as it strove to empty itself.

"Hmenh, may I present the Technarch of the Seven Worlds, Yang Egantei Mei Chant Ajal Dunia. As one of my oldest and dearest friends I could not help but think . . ."

The Technarch won for the moment over the rebellion of his stomach. He seemed for a second about to leave the Gallery but appraising the treasures turned to join his guests. As the human body has no memory for pain, the absolute revulsion Egantei felt for the guest, Hmenh, seemed unreal now that the sight of such ugliness was removed.

". . . that you and the Technarch would both profit from your meeting."

Seeing Egantei about to return, Dry Wine assumed to the hilt his role of overly officious friend performing introductions. He rose from his couch, deftly slipping to

the Technarch's side in such a way that Egantei could no longer avoid the spectre of Hmenh piled like a heap of garbage on the silver-wrought divan. "And," Dry Wine continued, "Egantei, I am sure that it is more than past time that you met Hmenh; there are few who can claim the friendship of the ugliest man in the Galaxy."

Stunned nearly senseless Egantei allowed himself to be maneuvered to his own divan. He was bound in the spell of ugliness; the twisted limbs, begrimed body, soiled clothing, fetid breath which blotted out the spice odor of the feast. The philosopher seemed unaware of the Technarch's distress and expounded continuously on the beauty of the treasures within the gallery. Egantei became enmeshed in the boneless half of Hmenh's face which hung down over his neck spreading a distorted mask of mouth and nose as a puddle of rotting offal on the man's chest.

"And this, Hmenh, this is the ultimate in art, an Ariadan soul sculpture completed at the exact moment of his death by . . ."

Cancerous lesions covered the face, oozing a slow drainage of pus even into the eyes of Hmenh.

". . . what could compare with the harmonious subtilities of the Alac Urn containing precisely 11,000 grains of sand taken from the singing beach of . . ."

The ugliest man in the Galaxy leaned forward, his ulcerous fingers emptied a bowl of mushy pudding onto the blue cloth. Groping blindly over the table the fingers filled the bowl with flakey keropok, egglike elor, soupy ementhal, and

on and on until the bowl was a heap of garbage.

"... is many millenia old, the last complete of its kind, truly exquisite."

Egantei could not move, could not turn his head.

The nerves within the wretched body of Hmenh were twisted on themselves. His body began to lurch in spasms, his near-fingerless hands poked food at his mouth but was almost infallibly thrown aside. Soon the food covered his face in gooey wads.

Dry Wine moved to his friend's side, selected the choicest morsels from the feast, poising his hand over the black decaying cavern of Hmenh's mouth. He seemed an emaciated mouse dropping flies to a toad which has been stepped on.

Egantei recovered suddenly from his trance, bent double over the edge of his divan and wretched the last globules of every meal he had ever eaten. His own vomit lay over the 333,333,333 tiled floor, covering the half smile of the ceramic hero Lian Tua. The odor and color of half digested food seemed to have a peculiar fascination to the Technarch. Weak exhilaration cleared his vision to a different seeing than he could remember. The beauty of the floor was destroyed by the bile which had been in him. Egantei raised his eyes to the soul piece which was in the center of the feast. As the floor, the beauty of the worked metal was no longer pure. It was flawed by the ugliness of Hmenh, and by the odor which rose from the vomit. Wherever the Technarch turned his head there was the curious blending of beauty

and ugliness. Never again could he divide his perceptions to behold the one half without seeing within it the ugliness which made it whole.

Egantei's face was pale as he spoke to the philosopher. "Your contract is completed philosopher." Not yet recovered the Technarch managed a weak sort of stagger which carried him out of the room.

When he had gone Hmenh recovered miraculously from the nervous spasms. The smile on his lipless mouth was an ugly match to that of Dry Wine. "Well, my friend, what have you accomplished this time?"

Dry Wine did not answer, he sat silently enjoying the feel of a mission nicely completed. As a student of balance he had accomplished much.

The Technarch who had blinded himself in his love of beauty had beheld ugliness. It would be difficult for him to view anything now without the shade of ugliness in it.

Togger A137 would be more than satisfied that the treasure had been stolen in such a way that it could never be regained.

Dry Wine would see that Hmenh received a share of wealth; it seemed likely the Technarch would pay for the privilege of not renewing their acquaintance.

Perhaps most importantly the Tyranny of the Seven Worlds would from this day be weighted by the wisdom of the Hintas School.

Dry Wine spoke aloud then, from the depths of his memory. "Hmenh, some philosopher somewhere nearly approached truth when he said: 'There's more than one way to skin a cat'."

*What can you say
when you're finished—*



SCOTT EDELSTEIN

WE ALL know the story of the folks from Barden: how their first spacecraft landed in the parking lot of a bowling alley in Akron, Ohio and caused a riot; how we became used to their looks and they became used to ours (we all know many of the hundreds of trite, amusing anecdotes and dirty jokes told by members of each race about the other's appearance and behavior); how the Bardenians set up

camp on Earth and started showing and teaching Earth people some of the things they knew; how our planet prospered and how we all grew as individuals because of what the Bardenians brought us. There is no need for a reiteration.

However, when the Bardenians left us suddenly one July afternoon, the human race was thrown into such a panic that the facts concerning the Bardenians' departure have

become obscured. Vicious rumors were spread. People accused the Bardenians of everything from heresy to the using of the blood of Christian children as a condiment. Other groups preached that the Bardenians were God, or Buddha, or Jesus Christ resurrected. One small cult in Georgia insisted that the Bardenians were really Russian Communists. It is even said that a religion sprang up in India which taught that the Bardenians did not exist and in fact never had. But this is hearsay.

Only recently have the facts concerning the Bardenians' departure been uncovered and verified. Here-with follows the true account of how and why the Bardenians left us. Also included are compilations of data concerning the Bardenians as a people and some of their contributions.

SOME ADVANCES in science brought to us by the Bardenians:

1. Worldwide use of solar energy for power
2. New drilling and mining techniques enabling us to withdraw minerals from deep beneath the Earth's crust
3. More efficient treatment of sewage
4. Low-cost extraction of minerals from sea-water

5. A coherent theory of space and time dimensions
6. Great improvements in farming techniques
7. A cheaper, longer-lasting shoe polish

A selection of the artwork given to us as gifts of the planetary government of Barden:

1. *The Books of the Caverns*
2. *The Winds* (parts two and three)
3. *The Stratosphere Ballet*
4. *The Chamelionic Domes*
5. The motion picture *Harvel the Hammerlag Goes to Yib* (edited for human viewing)
6. Seasonal movement in sculpture, as exhibited in the complete works of Omo Cliseno (simulated adaptation)

THE Bardenians had given us new hope for our planet. We had been on the edge of political and ecological catastrophe when they had first arrived. An historic marker (the banner the Bardenians planted immediately upon the landing of their first expedition) still stands in front of the now-famous bowling alley in Akron.

It was quite a remarkable coincidence that the Bardenians came along when they did. (In Bardenian terms, a random factor of immense

proportion and consequence.) Humanity was making preparations to cut its own throat, and no Earthly force was able to prevent the suicide. Then the Bardenians showed up, took one look at our planet, and single-handedly fixed things up for us. They brought us from the brink of disaster to the beginnings of renewed prosperity in a matter of months. When asked by national leaders why they helped us so unselfishly, a Bardenian spokesman answered, "Wouldn't you do the same for a backward culture? Isn't that what you're doing already with your 'underdeveloped' countries?"

In the words of H. J. Lummo-
lopo, a leading Bardenian econo-
mist and philosopher: "Nobody
does anything for its own sake.
What we're trying to do is show you
some Bardenian technology and a
little Bardenian culture. We have
quite a lot to gain economically,
scientifically, and culturally—even
artistically—from you."

(Bardenians had always been
fond, for some reason, of the Mon-
kees, Igor Stravinsky, Bela Bartok,
Salvadore Dali, and the films of W.
C. Fields.)

"Quite frankly, you are an in-
vestment to us, just as we are one to
you."

SOME breakthroughs in the social
sciences we learned from the
people of Barden:

1. Synectic memory storage
2. Telepathic contact between some
members of certain gene pools
3. The reaching of nirvana by one
hundred and ninety humans
4. Six previously un-thought-of
sexual positions
5. Limited verbal communication
with other mammals
6. An end to "dirty politics"
7. A definition of the terms "broth-
erhood" and "humanity"
8. An end to all war, and peace
with honor

A SELECTION of physical descrip-
tions of the people of Barden:

1. "Imagine a bagpipe with legs."
2. "Jesus, are they ugly. They've
got a whole mess of unjointed
arms—six or eight, I think!—
coming right out of the top of
their bodies. And their bodies
look like big fat wineskins. And
they've got four short, stubby
legs with human-looking feet.
They shine like they've got a
thick coating of grease all over
them."
3. "Imagine an inflated bowling
ball with two tumors on the bot-
tom and a bunch of branches
stuck in the top."
4. "Sure I can describe them. Take
a gigantic jello mold using three
gallons of mixed fruit gelatin,
right? Cut off four fetus feet and
balance the jello on top of them.
Then top the whole mess off

with a bunch of flutes stuck in at random."

5. "They're beautiful, really they are."
6. "An overgrown eggplant, painted reddish-purple, with bamboo growing where the hair should be and clumps of toes on the bottom."
7. "They look like my cousin Harriet. Christ, is she ugly."
8. "You ever seen how they have sex? They've got two of everything that counts, and four gonads. Listen, I can give you a whole big envelope full of eighty-by-ten glossies for only ten bucks."

THE Bardenians worked with us tirelessly for three years. In that time, ten Bardenian space missions had been sent to Earth. For three years they served as our teachers; they showed us our mistakes, pointed out untapped resources, set up trade negotiations, and showed us their own culture. They became a father-figure to much of humanity.

And then, spontaneously (to Earthmen), the Bardenians decided to leave, perhaps not forever, but, in Lummolopo's words, "for at least two or three hundred of your years—certainly long enough for you to ruin yourselves again."

It was Lummolopo who made the now-famous announcement of departure. He called a news con-

ference and had his image and his words broadcast all over the planet.

A CONDENSED outline of Bardenian thought:

1. You are constantly being judged by yourself and by others
2. All behavior should be enjoyed
3. All behavior, including neurotic and psychotic behavior, is necessary and most advantageous for the individual exhibiting it
4. All of the above can be drastically affected by any random factor or set of random factors
5. Self-determination exists only in a general sense
6. "Behaviorism fellates both my generative organs." —H. J. Lummolopo
7. Mind, body, and soul form a single entity, but they decay at different times and at different rates of speed

LUMMOLOPO's speech:

"I come to you this evening with some very grave news for your people. It is news I hate to deliver; indeed, I am appalled that the decision which I am duty-bound to relate to you now was ever made." (Here Lummolopo waved his tentacles of cartilage about.)

"Look—I had a long speech prepared, but I think I'm just going to chuck it and speak in less formal terms. My government isn't going

to like it, but that will be my worry, not yours. My speech was full of grief and depression, and I just don't feel like making things worse either for you folks or for myself.

"Very simply—myself and the rest of the Bardenian space research team are leaving. We may never come back."

(At this point, the room erupted into multi-media chaos.)

"The decision to leave was not mine," Lummolopo continued when the excitement had died down. "Indeed, I have grown very attached to Earth, and I am fascinated by human beings, and I do not wish to leave.

"In fact, in my view, leaving Earth is one of the most asinine decisions that has ever been made. But, as was quickly pointed out to me, I am in no position to make the decisions, only to make recommendations. Those in power can ignore my recommendations as often as they please.

"Essentially, that's it. We're leaving in the next four or five days, and you'll be on your own. Probably permanently."

(Here he paused.)

"If there are any questions, I'll try to answer as many of them as I can."

SOME questions from the floor, and Lummolopo's replies:

Q: Mr. Lummolopo, you haven't

told us specifically who is responsible for the decision.

A: Taolo Hodonna, our economic "president." And our general public.

Q: Mr. Lummolopo, did the public vote on the question?

A: No. As you know, we have a democracy, as most of your people do. In a democracy, the dictators are elected rather than self-appointed. But in a democracy, public opinion can rarely be ignored—although at times it can be manipulated by the leaders.

Q: But Lummolopo, you've hardly begun your study of Earth. And you've hardly begun to help us. You've got us dependent on you, practically under your thumb, and now you're going to leave us to rot. Don't you realize—

A: (interrupting) Please spare me questions of this sort. I repeat: I did not make this decision. Complain to Hodonna, not to me. This isn't really my affair.

Q: But don't you agree that we *will* rot, go right back to where we were when you first arrived, maybe be in a worse position? How can you just stand by and—

A: Don't you understand? Much as you intrigue me, my obligations are to my own people. I sympathize with your position. And I agree with you: you're in for some potentially hard times. Things will most likely be bad for you in the next few decades; I admit that freely. But I have some faith in you people;

you're not that different from us. I honestly think there's a pretty fair chance that you'll pull through—without us.

Q: It's all a plot, isn't it, Lummolopo? You had this planned from the beginning, I'll bet. Making us dependent on you, then taking away—

A: Don't be an idiot. We don't need another Akron riot.

Q: Mr. Lummolopo, you still haven't answered the most important question: why are you and your people leaving? What reason did Hodonna give for making you all leave?

(At this point, Lummolopo's body quivered violently.)

A: Sir, we people of Barden have our problems, too. We can help you out because we've gone through the same things you have, and we managed to survive them. All that our advanced technology and advanced philosophy mean are that we have different problems from you. More complicated ones. The people of Barden simply no longer consider exploring Earth a worthwhile venture. They insist that the money being used for space exploration could be put to better use back on Barden. Instead, programs on my home planet are being started up now—programs to make life all-around easier and more amusing for us.

Q: But I thought you said that the exploration of Earth would yield a profit for Barden.

A: It will—eventually. But my people say that's not soon enough. They want their benefits now. (Lummolopo paused here.) Excuse me. I am very angry and very tired. Perhaps someday we will return to help you out once again—but that will not be until the attitudes of my people change. Perhaps there are people on yet another planet who will come to Earth and take our place. And maybe, somewhere in the universe, there are people who will come and teach us. (Lummolopo paused.) Gentlemen and ladies, I am finished speaking for the night. I wish you all good fortune. As you people say, 'God bless you'.

(Bardenians firmly deny the existence of all deities.)

THREE days later, the Bardenians left. There was a ceremony just before the liftoff. Lummolopo was invited to speak at the ceremony. He declined.

NOW INSCRIBED on the Bardenian banner outside the bowling alley in Akron, in English and seven other languages, is the sentence, "We wait."

Elsewhere (on washroom and school building walls, especially) are the words:

BARDEN SUCKS.



Dear Jim,

Dr. T. Binding Phipps, the mathematician in Christopher Anvil's *CANTOR'S WAR* (Worlds of IF, June '74) certainly does not seem to have made set theory or the problems of infinity his field of study.

To begin with, Phipps (and the other characters involved, who as non-mathematicians may be forgiven) neglect to consider whether the sets of opposing spaceships in the story are of the same *order* of infinity. If, for example, the human-sent ships in the story's Tau-space can be placed in one-to-one correspondence with the infinite series of integers (1, 2, 3 . . .) while the enemy ships can be matched up with the infinite number of points on a line, we are truly outnumbered and had better sue for peace or find another space in which to fight. On the other hand, if the human ships equal in the size (or strength) of their infinity the number of possible geometric curves (Aleph Three, sez Cantor), then we can run those points-on-a-line ships right out of our part of the universe.

Since the human-owned ships got clobbered in the story, we may assume that the enemy's infinity did possess a higher Aleph-number than did ours. As for the problem of matching up the series of even integers with that of all integers, or manning an infinite fleet of spaceships with a corps of pilots drawn from only the even-numbered ships . . .

When matching infinite sets, a *rule* of correspondence (not just an example "at one end") must be stated. Phipps' adversaries in the argument are perfectly correct in stating that his showing them a few pairs of both series matched proves nothing. Correspondence of the set of even integers matched

with that of all integers should be stated

$$\begin{array}{ccccccc} 1 & 2 & 3 & \dots & n & \dots & \\ 2 & 4 & 6 & \dots & 2n & \dots & \end{array}$$

Note the all-important little *n*. Stated this way, we have a rule, which says that every integer in the series containing both odd and even is associated, paired off, with its double. No example can be produced of an integer for which this rule now fails to hold; therefore it is assumed to hold for all.

In the case of the ships and pilots, let us assign each ship a number in order from the set of all integers. Each pilot will be assigned an even number, corresponding to that of the ship he is originally in. "Now hear this, now hear this. All pilots, leave your ships." (Shuffle shuffle, tramp tramp, clang clang.) "Now each of you guys find a ship whose number is one half, exactly, of your assigned number. Now get back in." (Shuffle, tramp, clang, thud. Thud? Always an oddball in every outfit.)

"You there, you don't have a ship? What's yer number? Four billion and twelve? Then you go into two billion six. Now if the Admiral finds any empty ships when he comes around to inspect, we're gonna know the assigned numbers of the wise guys who are supposed to be in'em. So you better be there . . ."

May you print many more stories that are as much fun to read and think about.

Joan & Fred Saberhagen

But personally I find Anvil a lot more fun to read! Perhaps you, Fred, should write a story demonstrating the validity of Cantor's Theorem!

Dear Jim Baen,

Good luck! Here is my subscription to *IF* and to *Galaxy*.

I had fun reading Christopher Anvil's *Cantor's War* in your May-June issue. I am now working for my Ph.D. thesis in mathematics.

Here are my comments. What Cantor said is this: Let us agree that two sets have the same size if they can be put in one-to-one correspondence (i.e. if we can make pairs of elements, the first element of the pair being an element from our first set A, the second element of the pair being an element from our second set B, in such a way that if # is an

element of A, then there is exactly one pair with # as its first element, and if % if an element of B, then there is exactly one pair with % as its second element).

Then, said Cantor, there are as many numbers as there are even (or, for that matter, odd) numbers. The proof of that is stated in Anvil's story.

Anvil questions later the validity of this result by considering a "practical" example: an infinite number of spaceships, only one out of two is manned. He evokes mounting piles of empty spaceships, and the increasing difficulty of getting pilots as he builds his one-to-one correspondence between spaceships and pilots. Of course he is right. But what he says is irrelevant. The Cantor result takes no mention in the acrobatics involved in building a certain one-to-one correspondence; it depends only on whether the correspondence exists or not.

If I had been in Phipp's place, aside from being pleased at seeing military equipment wasted on the screen, I would have put my best sadistic-mathematical smile after the general's description of piles of empty spaceships, and told him that not only had he twice as many spaceships as he had pilots, but that at the same time he had fifty times as many pilots as he had spaceships.

The point is, Cantor's definition of "same size" is (as he knew, as everybody knows) coarse. It is useful because it is simple to state, and because it can be applied to any pair of sets, however dissimilar the sets. When one has additional information about the sets one wishes to compare, then one can devise a suitable definition of what "same size" means in that particular context. This is done routinely in mathematics.

For example, in Anvil's story, the military men quite adequately were comparing the sizes of the forces by counting the finite number of spaceships of each army contained in a square on the screen. They used the fact that they had squares in which to count ships, which is additional information on the sets involved, in order to devise a way of comparing sizes in a more precise fashion than Cantor's.

Esther Rochon
2986 Lacombe
Montreal H3T 1L4,
Quebec, Canada

Well, Chris?

Dear Editor:

One of your '69 dropouts who picked up the June issue. In Chris Anvil's *Cantor's War* I did not really understand the part about Tau space and the blinding white light, etc. I think I did understand the pilots locked in every other one of an infinite number of ships analogy. You could move the ships so there were 2 ships with pilots, then 2 without, 2 with, 2 without, and so on. Then you could switch to 4P, 4W, 4P, 4W . . . then to 8P, 8W, 8P, 8W . . . As a matter of fact, given enough time and any number n Anvil could name I could give him n in a row pilots, followed by n without and so on. Which (technically, Mr. Anvil) means that n increased without upper bound. Anyway Binding should have got Mary Lou. Glad to see Asimov back to his consistent first-class form (as compared to the debacle "The Gods Themselves"). Good luck.

David Clendaniel
707 Lincoln
Walla Walla, Wash. 99362

Dear Mr. Baen:

I usually pass up *IF*. However, I found your June 1974 issue really FANTASTIC. I really think you got something. There is still some room for improvement concerning your cover. I think a much bolder approach should be taken. How about trying to get Kelly Freas to do some?

Dick Geis' column, "The Alien Viewpoint," is really tops. I think his column will add a lot to *IF*: fandom should be taken seriously.

Sincerely yours,
Roy D. Schickedanz

Thank you, Roy. As for bold covers, take a look at August Galaxy. (That one is so bold I'm a little nervous about it!) Fandom: I will take fandom seriously as long as fandom does not return the favor.

Dear Mr. Baen:

Your opening issue is most interesting, and I hope my comments on the stories might give you an idea of how well you're doing your job.

SECOND ADVENT obviously tells us how and why Nixon cannot reveal certain tapes—maybe they don't exist, since . . .

and; **THE PEOPLE'S CHOICE** shows us how a person like Nixon might get elected. Or am I wrong?

BERSERKER'S PLANET—con't next issue.

The Asimov and Silverberg up to par for each. Nothing earthshattering, though. **CANTOR'S WAR**—a fine bit of mathematical fiction that sounds most logical. True, too; considering it was used in a real-world situation, not a 'pure' mathematical environment. The Schmitz—another typical story by him, with a 'surprise' ending (I just can't imagine him writing a gloomy story) that sets everything aright.

NOSTRADAMUS—now; do we really need the sort of story that ends on a doomsday note?

It hadn't corrupted itself much prior to that.

Now: the features. If your promises can be delivered, maybe you'll eventually have a group of goodies like **AMAZING/FANTASTIC** has. (That reminds me: "I don't like *Amazing* because of an almost snobby editorial feel and a cry-baby attitude."—Grimshawe, p. 170 Issue No. 172. This sounds rather shallow to be published, and may anger some *Amazing* readers. I subscribe to the top six magazines, and must admit I favor White's editorial policies. Maybe you can come up with something better. It doesn't help, though, to shove aside the women-writer issue as if you're going to be a male chauvinist. I would imagine around half your readers were women (20%. —Ed.) who also might believe you're being biased. But, I give you the doubt well-deserved, and hope you receive fine manuscripts from our women writers.)

Geis. I've heard about him, in fandom, but never seen anything of his. Now it looks like I'll have the opportunity on a bimonthly basis (any chance of going monthly again?). Fine reading, it helps to know the people and their ideas behind sf. Del Rey good as usual with reviews, etc.

Looking forward to issue next; as your first *Galaxy*.

Sinc;
R. J. Schenck
RD #1
Canisteo, NY 14823

"Second Advent" was (for me at least) little

more than wistful-thinking. As for "The People's Choice"—I have no idea. Doomsday stories, as such, are neither called for nor uncalled for—depends on how good they are and the nature of the rest of the issue. Grimshawe's comments on Ted White; I censored neither Grimshawe—nor Schenck.

Now, as for sexual bias: I can think of nothing more biased—nor exploitive!—than an all-female issue. On the other hand, I am perfectly willing to "admit" that I consider Ursula K. Le Guin to be one of the top five living sf writers. (No, I'm not about to narrow it down any further.)

Dear Sir:

You have printed a blasphemy in Mack Reynolds' *Second Advent*, (June 1974 issue). The Book of Revelation teaches that the Lord Jesus Christ shall appear in the clouds, with power and glory, and that His coming in the clouds shall be equally visible from the west as from the EAST.

Notwithstanding this clear Biblical doctrine, Mack Reynolds has chosen to enact the second coming in darkness save for a few. Or to conceive and write of it being done that way, which is the same thing. Please inspect the stories of Mr. Reynolds more carefully from now on. We were so angry that it was asked and agreed to that I tear the offending story out of the magazine.

Yours in Christ
J. Parker Wilbern, Chairman
Federal City Conservative Club

While I may not share Mr. Reynolds' views on this subject I must uphold his right to express them.

Dear Mr. Baen,

As a reader of *Galaxy* and *IF* for a few years, I was beginning to suspect the magazines were sliding into the doldrums. In fact, I was toying with the idea of terminating my subscription, and just picking up the ones I wanted at the newsstand. Then things started improving for some unsuspected reason. And then the "New Editors Introductory Issue" of *IF* arrived and really spun my head on its axis. Not only do I enjoy the new features in *Galaxy* and *IF*, but the stories themselves seem better in the brighter layouts of the magazines.

I especially enjoyed the Pohl-Williamson

collaboration, and *The Org's Egg* fairly screams for at least one sequel. Anything by Bob Shaw is usually good, and *Orbitsville* is maintaining in my eyes his esteem as a writer.

In closing, I would like to say that the most improved feature in the magazines (no fooling) are the contents pages.

Sincerely,
David Keller

Thank you—I put a lot of work into those two pages!

Dear Mr. Baen:

Pronunciation please—Ben, Bain, or Bean? [#2]

I have been out of the habit of reading *IF* and *Galaxy* religiously for some years now. The editorial changes in the June *IF* took me by surprise. The longest I'd followed either mag lately was the four installments of "Inverted World" by Christopher Priest, and I found the ending a let-down.

But the June *IF* looks good. Hope to see it go monthly again. (Remember when *IF* was every month and *Galaxy* every other? [*Sure do.*]) Even the new contents page looks snappy.

"Stranger in Paradise" is not Asimov's best, but any new sf by the Good Doctor is welcome. Silverberg, Anvil and Schmitz came up with a good assortment, and the shorts were good. If this keeps up for the next couple of issues, I'm going to subscribe instead of relying on fate at the newsstand.

Reader Grimshawe was right in his letter about something missing since Fred Pohl left. I hope you can bring us an original excitement of your own.

One of Pohl's policies I wouldn't mind seeing revived is the "one story by a novice" per issue, since I'm sending you a short under separate cover.

Regarding Grimshawe's suggestion for commenting on published sf, I'd like to mention a book I just read that I haven't seen reviewed in any of the mags. *EARTH-WRECK* by Thomas N. Scortia, just published by Fawcett Gold Medal (95c). It's a fast-paced story with a good plot and excellent characterizations. I'd recommend it highly. It's an after-the-bomb story with a difference.

I just reread A. E. van Vogt's *THE CHANGELING* and it blew my mind. Not

so much the story itself, but "President Jefferson Dayles" seeking reelection in the 1972 elections. His inner thoughts and feelings, the extremes he's willing to go to to insure winning reelection in '72 are like a prophecy of Watergate. If, van Vogt has been a prophet all these years and we didn't know it, stay the hell away from Calonian Recruiting Centers!

Good Luck,
Jack Klein

Are you, sir, perchance guilty of anti-Calonianism . . . ?

Dear Mr. Baen,

Heartiest congratulations on your accession to the galactic hot seat; and on getting R. E. (Heilige) Geis as columnist. Mr. Geis is a man of furious energy, pithy and pointed, no less than slashing with the critical broadsword. While he is overly ready to get his sexual fantasies into his own zine, it is more than probable that he can be confirmed in the thought that cleanliness is next to godliness. He is a fine and perceptive commentator with a wealth of bright one-liners and subtle twists of thought and idea.

All of the very best critics, or perhaps nearly all, are in some sense academics, but certainly were trained in the groves of academe. Most of the authors of sf are self-made and self-taught, and generally therefore suffer from some inferiority complex or other. This they display with petty antagonistics, reviling the academic critic in an exhibition of ignorance. This is an unfortunate thing in the literary discipline, which is our most perfect democracy, and in which demagogery and mean ranting should have no place.

With best regards and all good wishes, I remain,

Very cordially yours,
Alexander Doniphan Wallace
306 E. Gatehouse Drive, Apt. H
Metairie, Louisiana 70001

Dear Jim:

I thank Dr. Wallace for his compliments. But he's wrong about my sexual fantasies; they appeared indecently only in my personal journal (*RICHARD E. GEIS* #1-3 and in *THE ALIEN CRITIC* #4) well over a year ago. I suppose his psyche is still twitter-

ing in shock since he ordered a copy of #2 as part of his ALIEN CRITIC subscription.

I laughed like hell over his assertion that most sf authors feel inferior to academic critics. Everyone knows God's 13th Commandment reads: *English professors shall forever write dull, turgid, impenetrable prose*. There's no other possible explanation for writing that badly for publication.

How's that for petty antagonism?

Best,
Dick Geis

Pretty good, Dick!

Dear Mr. Baen:

This is the first issue of *IF* since Pohl quit that I have finished cover to cover. (And since I let my subscription lapse.) With *Analog* over-rated and F & SF wallowing in artsy quasi-New Wave shorts, I was forced to fall back on Ted White's efforts. Only moment of sorrow I will feel about your new editorship is that it may finish off *Amazing* at last by drawing the hard core Romantics back into *IF* and even *Galaxy*.

More substantial commendations: enclosed is my \$11.95 for both of your publications at this fabulous pre-inflationary rate. Also, my "World's Only Libertarian Fan-

zine". *New Libertarian Notes*, will have an appropriate rave.

Don't slacken the pace or I swear I'll cancel. Give us Heinlein, de Camp, Asimov, Niven, Saberhagen, Pohl, and discover some new Doc Smiths and C. M. Kornbluth's while you're at it.

Makes me feel like a neofan again.

Yours For A New Liberty,
and a Free Fandom,
Samuel Edward Konkin III
Box 294, Peter Stuyvesant Station
New York, New York 10009

WE INVITE LETTERS

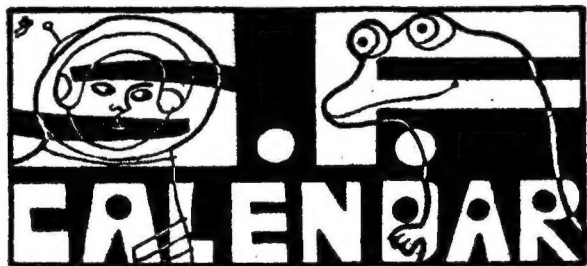
Send to:

HUE AND CRY

IF

235 E. 45th Street

New York, New York, 10017



SEPT. 27-29. PgHLANGE VI at the Sheraton Motor Inn, Pittsburgh. GoH: Joanna Russ. Reg: \$3.50 in advance, \$4 at door. For info: Lisa Anne Ivey, 1380 Foxwood Dr., Monroeville, PA. 15146.

OCT. 26-27. MILEHICON VI at the Sheraton Airport Inn, Denver, CO. Membership \$3. For info: Ted Peak, 1556 Detroit, #1, Denver, CO. 80206.

NOV. 1-4. NOVACON 4, Birmingham, England. For info: Dr. Joel Cohen, Dept. of Zoology, Univ. of Birmingham, Birmingham, U.K.

NOV. 23-25. FILM-CON 3, International Fantasy Film con. Membership \$10. For info: Film Con, Box 74866, Los Angeles, CA. 90004.

JAN. 24-26. ConFUSION 13 in the Michigan League, Ann Arbor, Michigan. GoH: Fred Pohl. Fan GoH: Mike Glicksohn. For info: Ro Nagey, Rm. 240 Michigan Union, U. of Mich., Ann Arbor, Mi. 48104.

Galaxy

GALAXY/IF S-F MART

235 East 45 Street
New York, N.Y. 10017

if

50¢ per word per issue (including name and address) or 3 issues (two GALAXY & one IF) for \$1.00 per word. 10-word minimum. Payment with order.

GALAXY is now published monthly; IF remains bi-monthly. To enable our advertisers to take advantage of the trio combination, we are now offering a discount price of \$1.00 per word to run in the three issues that appear in a 2-month period. Our regular price is now 50¢ a word per issue. Whatever your choice . . . it's a bargain.

BOOKS AND MAGAZINES

WANTED TO BUY—All issues of science fiction and fantasy magazines from 1926 to date. Harry Bennett, 6763 Hollywood Blvd., Hollywood, CA. 90028.

BOOK & MAGAZINE READERS! Send wants to: S & S Books, G-6, 80 North Wilder, St. Paul, Minn. 55104

ILLUSTRATED CATALOG of SF-Fantasy books. Over 2,000 titles listed. Send 25 cents for one, \$1.00 for next 4, or \$2.00 for four consecutive catalogs plus Silverberg's "Dying Inside" a \$6.25 publisher's edition SF book. Send to: Purple Unicorn Books, 4532-G2 London Road, Duluth, Minn. 55804.

LOGIC NEWSLETTER—Logic design and construction. Sample copy \$1.00. LOGIC NEWSLETTER, POB 252, Waldwick, New Jersey 07463.

Old copies of Playboy magazine for sale. Send \$2.00 for our Catalogue, Price List, and Information, to: Back Issues, Box 4269, Suite 224, Ottawa, Canada K1S5B3.

WANTED—A complete file of *Astounding/Analog* issues beginning with that of January, 1930. Apt. 160, Woodside Apts., Oneida Street, Utica, N.Y. 13501.

NON-NEWTONIAN CALCULUS: The new mathematics Einstein sought? Send stamped-addressed envelope. Leepress, Rockport, Mass. 01966.

SF-FANTASY BOOKLISTS. RED DEVIL BOOKS, 218½ E. 2nd Street, Duluth, Mn. 55805.

Poetry Market Newsletter—Send self-addressed stamped envelope for information: Gove, Box 4-1166A, Anchorage, Alaska 99509.

PYRAMIDS

PYRAMID POWER—The Toth Pyramid is the ONLY authorized, endorsed model of the patented Czechoslovakian pyramid. Complete package only \$4.00. Toth Pyramid Company, Box H, 81-60 248th St., Bellerose, NY 11426.

RECORDS AND TAPES

ON FEBRUARY 11, 1969, a record was found on a New York City elevator. It purports to have been recorded some 100 to 150 years from now. Copies may be purchased for \$3.00 from THE RECORD, Box 3011, New York, New York 10008.

NOW! Original, complete radio performances of exciting Science Fiction and Mystery on tape. Cassette catalog—Free. Reel catalog—\$1.00. Virgo House, Box 1060-G, Des Moines, Iowa 50311.

MISCELLANEOUS

ESP SPECIALIST, prediction expert. Personal problems, 3 questions for \$10, or seven for \$20. Milton Kramer, 9100 N. Cumberland Ave., Niles, Ill. 60648.

STAR TREK FANS—Photos; Unique Souvenirs; Catalog 50c: Star Trek Productions, P.O. Box 127, Holmes, Pa. 19046.

CUSTOM 5" TALL SKULL CANDLE, \$3.00. Strobes, pillars, many others. Free catalog. S-T, Box 1885, Ann Arbor, Mich. 48106.

FABULOUS FLYING STARS. Japanese martial arts target practice as seen on Kung Fu. \$3.00 (4 or more 20% off), SHURIKEN, 144 West 19 St., NY, NY 10011.

SEMI-PRECIOUS

JEWELERS! HOBBYISTS! Genuine highest-quality cut and polished Southwestern turquoise stones available in retail and bulk. Stones range in size from two to two-hundred carats. Retail prices: Morenci, \$1.00/carats: Bixbee, \$1.25/carats: Royston, \$0.80/carats. Wholesale prices negotiable. To order or for further information write: S. Kramer, PO Box 569, Woodstock, N.Y. 12498.

LIFE BEYOND THIS WORLD!



This fantastic book will reveal Science Fiction drawn from true life experiences and the possibility of your life on another planet. Read **HAVE YOU LIVED BEFORE THIS LIFE?** by L. Ron Hubbard and discover the future in your own past.

PAST LIVES CAN BE REMEMBERED!

If you think you can't remember your past lives, this book will change your mind. Here are actual case histories of ordinary people who became able to remember their past lives and how it

affected them. You can remember them too! Get this book **TODAY!**

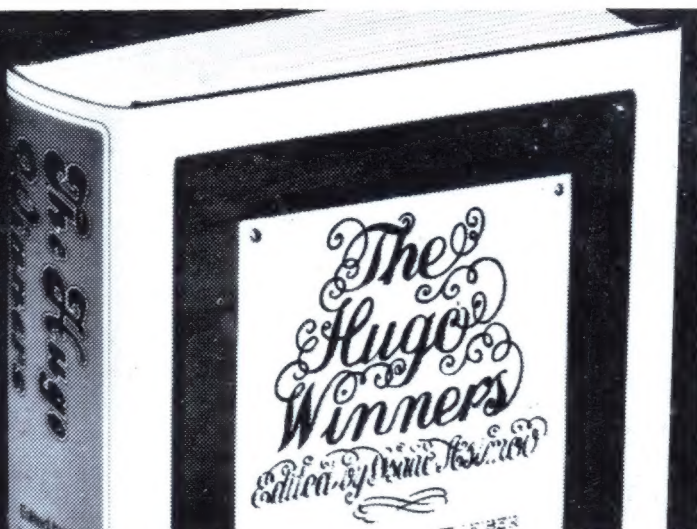
Send \$4.00 to:

**Bookstore GY-I
Founding Church
of Scientology
1812 19th St. N.W.
Washington, DC 20009**

Your copy shipped immediately. Satisfaction guaranteed.

Scientology is an applied religious philosophy.

READ AT YOUR OWN RISK



It's packed with pleasure and excitement . . . crammed with its own rewards. And its own definite risks. You might become hooked for life. You'll know why, once you've sampled: **THE HUGO WINNERS**, an 864-page anthology of 23 tales awarded the Hugo, speculative fiction's Oscar. **DUNE**, by Frank Herbert, winner of both the Hugo and Nebula Awards. Or, **THE GODS THEMSELVES**, Isaac Asimov's first novel in fifteen years.

But you decide. Choose any 4 books on this page for just 10¢ and you're on your way to mind-bending membership in the Science Fiction Book Club.

Here's how the Club works:

When your application for membership is accepted, you'll receive your introductory package of four books for just 10¢. Examine them in your home, and if not completely satisfied, return them within ten days—membership will be cancelled and you'll owe nothing. About every 4 weeks (14 times a year), we'll send you the Club's bulletin, *Things to Come*, describing the 2 coming Selections and a variety of Alternate choices. If you want both Selections, you need do nothing; they'll be shipped automatically. If you don't want a Selection, or prefer an Alternate, or no book at all, just fill

out the convenient form always provided, and return it by the date specified. We try to allow you at least ten days for making your decision. If you do not get the form in time to respond within 10 days, and receive unwanted books, return them at our expense.

As a member you need take only 4 selections or Alternates during the coming year. You may resign any time thereafter, or remain a member as long as you wish. Most books cost only \$1.49 plus shipping and handling. Occasionally, extra-value selections are slightly higher but always much less than Publishers' Editions. Send no money. But mail coupon today.

ANY 4 SCIENCE FICTION BEST SELLERS FOR JUST 10¢ with membership

Science Fiction Book Club

36-S123

Dept. FR-288, Garden City, New York 11530

I have read your ad. Please accept me as a member in the Science Fiction Book Club.

Send me, as a beginning, the 4 books whose numbers I have indicated below, and bill me just 10¢ to help cover shipping. I agree to take 4 additional Selections or Alternates during the coming year and may resign anytime thereafter.

--	--	--	--

Mr.
Mrs.
Miss

Please print

Address

City State Zip

8532. **The Hugo Winners**, Vol. I & II. Giant 2-in-1 volume of 23 award-winning stories, 1955 to 1970. Asimov introduces each. Pub. ed. \$15.45

6353. **The Ice People** by Rene Barjavel. Prize winning French bestseller of discovery of prehistoric man and woman, who come to life! Pub. ed. \$5.95

7518. **Thuvia, Maid of Mars and The Chessmen of Mars** by Edgar Rice Burroughs. 2-novel, 1-volume sci-fi special. Adventures of man on planet Mars. Spec. Ed.

6577. **The Sheep Look Up** by John Brunner. The celebrated author, of *Stand On Zanzibar*, a mind-bender that chronicles the collapse of civilization. Pub. ed. \$6.95

2790. **Science Fiction Hall of Fame I**. 26 "winners," chosen by Sci-Fi Writers of America. Ed. Robert Silverberg. Pub. ed. \$7.95

6023. **The Gods Themselves** by Isaac Asimov. The master's first novel in 15 years . . . and worth the wait for a fabulous trip to the year 3000. Pub. ed. \$5.95

6270. **Dune** by Frank Herbert. Celebrated winner of Hugo and Nebula. Gripping tale of family exiled from their private planet to another, a barren desert. Pub. ed. \$5.95

8037. **Again, Dangerous Visions**, Harlan Ellison, ed. Forty-six pieces, short stories & novels. **Explicit scenes and language may be offensive to some.** Pub. ed. \$12.95

4432. **The Wind from The Sun** by Arthur C. Clarke. 19 sci-fi short takes by a master of the medium. **The Cruel Sky and Dial F For Frankenstein** are two of the featured fantasies. Pub. ed. \$5.95

6007. **A Treasury of Great Science Fiction**, ed. by Anthony Boucher. 2 Volume set. 1,000 pages. Counts as one book. Pub. ed. \$5.95

6221. **The Foundation Trilogy** by Isaac Asimov. The ends of the galaxy revert to barbarism. Pub. ed. \$14.85

6171. **The Dancer from Atlantis** by Poul Anderson. Four people — from different ages and cultures — are catapulted by a time machine back to 1400 B.C. Spec. Ed.

The Science Fiction Book Club offers its own complete hardbound editions sometimes altered in size to fit special presses and save members even more. Members accepted in U.S.A. and Canada only. Canadian members will be serviced from Toronto. Offer slightly different in Canada.